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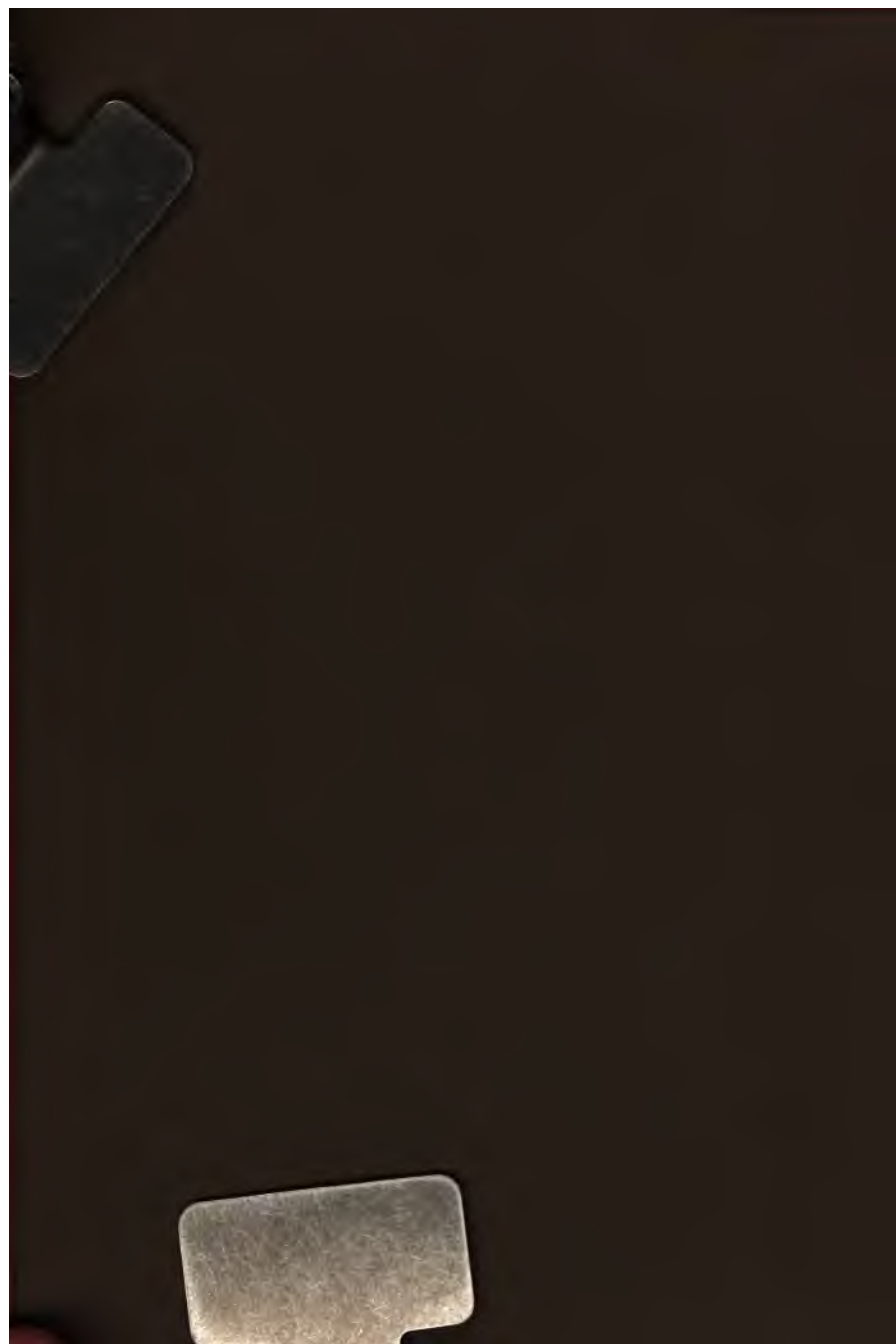
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NATURAL
HISTORY





the 1990s, the incidence of *S. flexneri* has increased in the United Kingdom [10]. In the United States, *S. flexneri* has been reported as the most common serotype in children with acute bacterial dysentery [11].

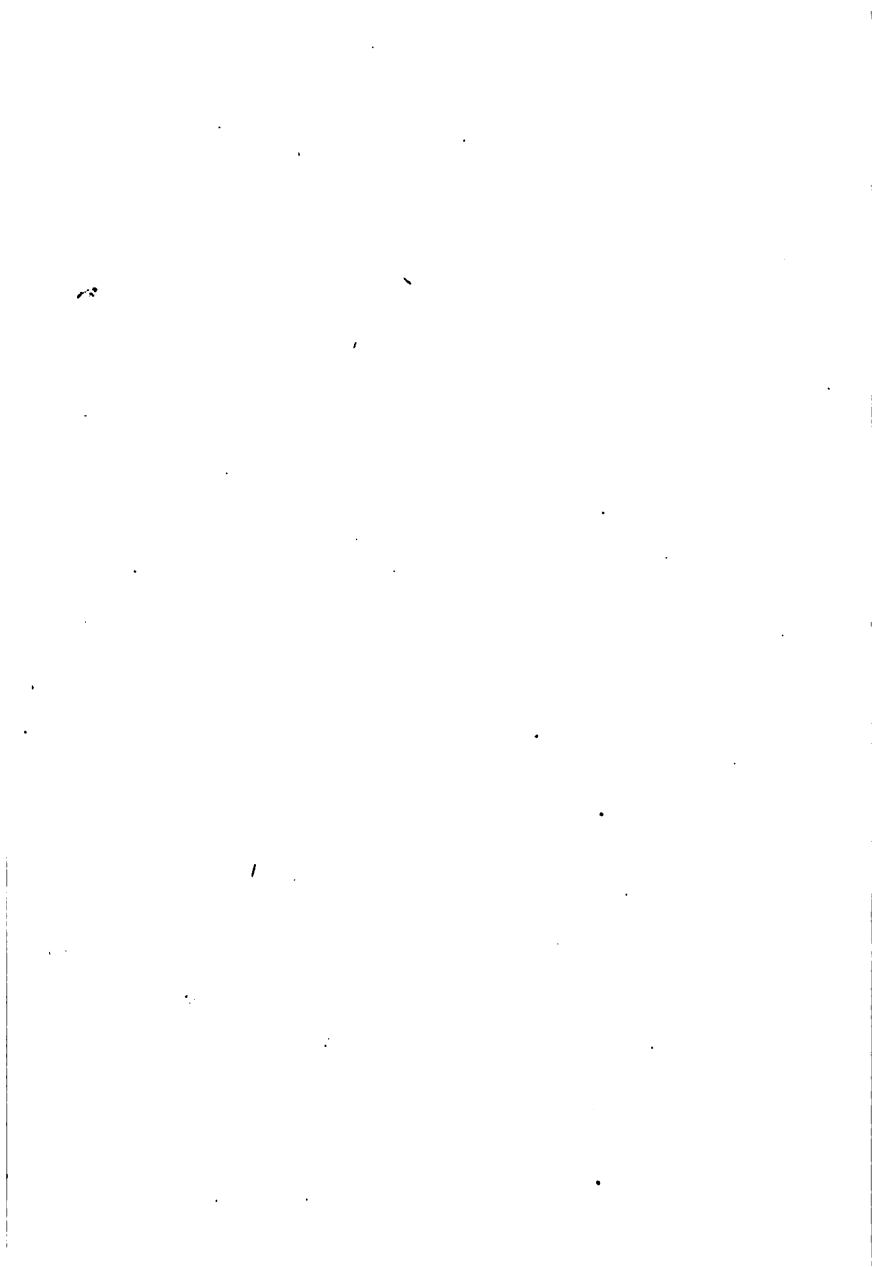
There is a paucity of data on the epidemiology of *S. flexneri* in the United Kingdom. In the 1980s, *S. flexneri* was the most commonly isolated serotype from patients with acute bacterial dysentery in the United Kingdom [12]. In the 1990s, *S. flexneri* was the most commonly isolated serotype from patients with acute bacterial dysentery in the United Kingdom [13]. In the 1990s, *S. flexneri* was the most commonly isolated serotype from patients with acute bacterial dysentery in the United Kingdom [13]. In the 1990s, *S. flexneri* was the most commonly isolated serotype from patients with acute bacterial dysentery in the United Kingdom [13].

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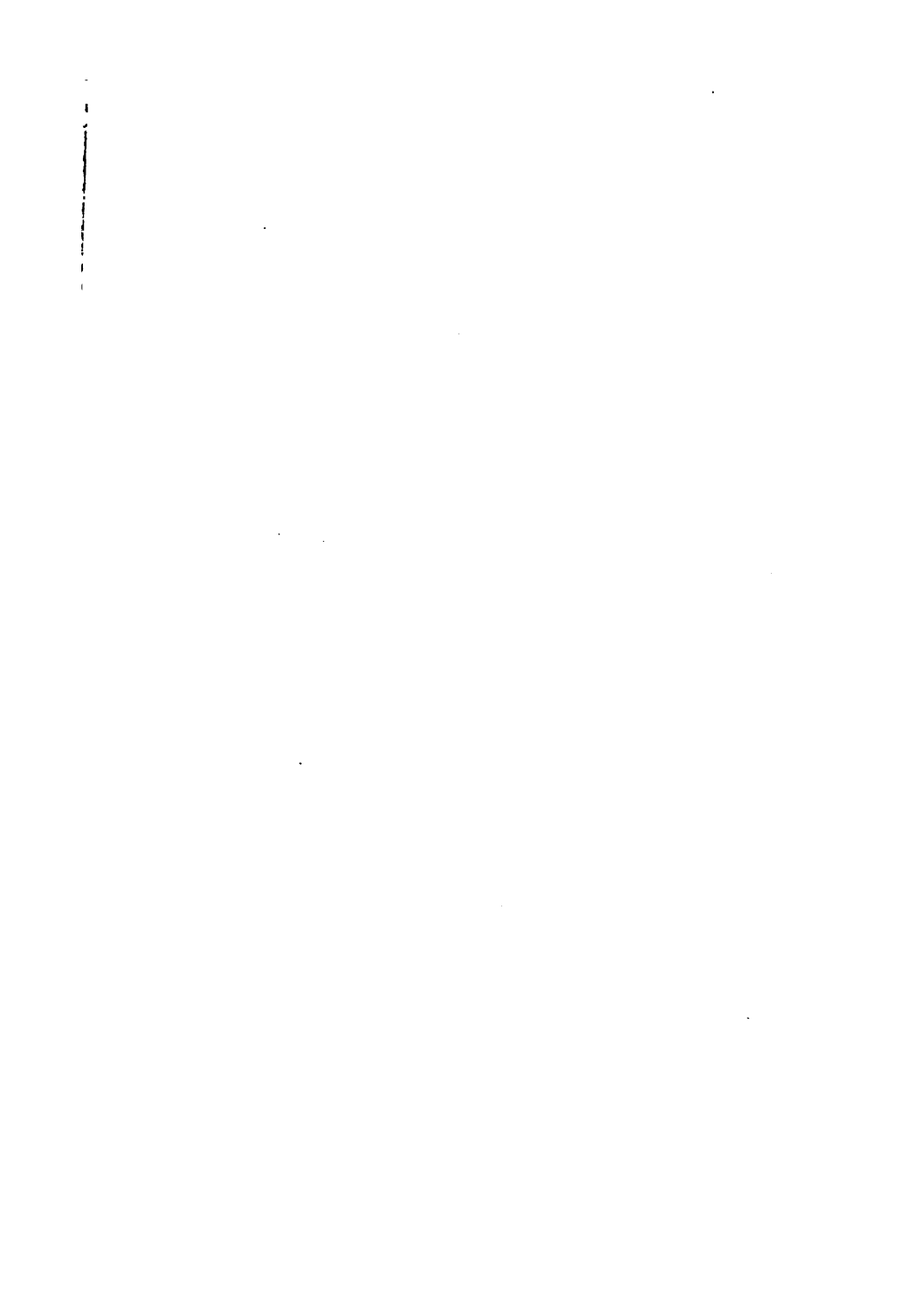
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ANECDOTAL AND DESCRIPTIVE

NATURAL HISTORY.



1. The first part of the document is a list of names and addresses of the members of the committee.

ANECDOTAL AND DESCRIPTIVE
NATURAL HISTORY.

BY
A. ROMER.

ILLUSTRATED WITH
EIGHT COLOURED PLATES AND NUMEROUS WOOD ENGRAVINGS.



*

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CONTENTS.

	PAGE
CHAPTER I.	
INTRODUCTION	1
CHAPTER II.	
THE ELEPHANT	6
CHAPTER III.	
THE RHINOCEROS	22
CHAPTER IV.	
THE LION	31
CHAPTER V.	
THE PUMA, OR AMERICAN LION	41
CHAPTER VI.	
THE TIGER	48
CHAPTER VII.	
THE LEOPARD AND PANTHER—THE CHEETAH OR HUNTING LEOPARD—THE OUNCE—THE JAGUAR—THE OCELOT	58
CHAPTER VIII.	
THE HYENA—THE PROTELES—THE JACKAL—THE ZEBRA— THE QUAGGA	70

	PAGE
CHAPTER IX.	
THE RUMINANTIA—THE CAMEL—THE DROMEDARY—THE LLAMA—THE GUANACO—THE GIRAFFE	81
CHAPTER X.	
THE QUADRUMANA—THE CHIMPANZEE—THE ORANG-OUTAN —THE GORILLA	103
CHAPTER XI.	
THE GIBBONS—THE SIAMANG—THE AGILE GIBBON—THE ATELES—THE QUATA OR COATTA—THE BABOONS—THE COMMON BABOON—THE CHACMA—THE MANDRILL—THE DRILL	131
CHAPTER XII.	
THE BUFFALO—THE YAK—THE BISON—THE MUSK OX	150
CHAPTER XIII.	
THE MARSUPIALIA—THE KANGAROO	163
CHAPTER XIV.	
THE BEAR—THE BROWN BEAR—THE BLACK BEAR—THE GRISLY BEAR—THE POLAR BEAR—THE MALAYAN SUN BEAR—THE SLOTH BEAR—THE SPECTACLED BEAR	167
CHAPTER XV.	
THE WOLF—THE COMMON FOX—THE AMERICAN RED FOX— THE TRI-COLOURED FOX—THE BLACK OR SILVER FOX	175
CHAPTER XVI.	
THE REINDEER—THE ELK—THE GNU—THE NYLGHAU— THE IBEX—THE GEMS BOX—THE CHAMOIS—THE GAZELLE	180

LIST OF ENGRAVINGS.

	PAGE
SHOOTING ELEPHANTS	10
A TIGER HUNT WITH ELEPHANTS	13
THE DECOY ELEPHANTS	19
HUNTING RHINOCEROSES	29
HEAD OF THE LION OF SENNAAR (Front Face)	32
THE MANELESS LION	34
HEAD OF THE LION OF SENNAAR (Profile)	38
THE LION DEVOURING A SERPENT	39
PUMAS	47
DISPUTING THE PREY	50
HEAD OF YOUNG TIGER	57
THE CHEETAH, OR HUNTING LEOPARD	64
THE OCELOT	69
THE AARD WOLF, OR PROTELES	74
CELLS OF THE CAMEL'S STOMACH	84
THE CAMEL'S FOOT	85
THE GUANACO	96
TONGUE OF THE GIRAFFE	99
HUNTING THE GIRAFFE	101
PORTRAIT OF TOMMY	112
THE AGILE GIBBON	135
CHACMAS	144
HEAD OF AN AGED MANDRILL	147
THE DRILL	149
THE YAK	155
HUNTING THE BISON	160
THE BEAR	169
THE SPECTACLED BEAR	174
WOLVES OF FRANCE	176
THE TRI-COLOURED FOX	178
THE RED FOX	178
THE BLACK OR SILVER FOX	179
HUNTING THE GNI'	182
THE GEMS-BOX	183

LIST OF PLATES.


PLATE I		<i>Opposite to</i> PAGE 6
	THE AFRICAN ELEPHANT—WHITE INDIAN ELEPHANT— ONE-HORNED RHINOCEROS.	
PLATE II		31
	THE AFRICAN LION AND LIONESS—THE BENGAL TIGER AND TIGRESS.	
PLATE III		58
	THE OUNCE—THE LEOPARD—THE PANTHER—THE HYENA—JACKALS—ZEBRAS.	
PLATE IV		81
	THE CAMEL—THE DROMEDARY—THE GIRAFFE.	
PLATE V		103
	THE GORILLA—THE QUATA—THE CHIMPANZEE—THE BABOON—THE ORANG-OUTAN.	
PLATE VI		159
	THE CAPE BUFFALO—THE MUSK OX—THE BISON—THE KANGAROO.	
PLATE VII		167
	THE GRISLY BEAR—THE POLAR BEAR—THE SLOTH BEAR —THE MALAYAN SUN BEAR—WOLVES—THE FOX.	
PLATE VIII		180
	THE GAZELLE—THE REINDEER—THE ELK—THE CHAMOIS —THE IBEX—THE NYLGHAU.	

ANECDOTAL AND DESCRIPTIVE

NATURAL HISTORY.

CHAPTER I.

INTRODUCTION.

 HIS work is not intended to be of a strictly scientific character, but rather of an entertaining, descriptive, and generally instructive nature; and is designed to excite the interest of young people and of their elders who have not hitherto given any attention to the subject of Natural History. Nevertheless, it will be found to comprise much important scientific matter, chiefly of a popular character, extracted and compiled from the most eminent authorities, which we trust will induce many of our readers to study the subject further and more systematically.

The utility of the study of Natural History is now so generally and fully admitted that it is unnecessary to adduce any arguments in its favour. It is a study peculiarly fitted for young people, not only exciting their interest and affording them much rational amusement, but also leading them to observe—a point not sufficiently inculcated in the education of youth, although of the highest importance in after life. An

excellent illustration of the power of observation is given in the story of "the Dervis and the Lost Camel," in Chapter IX. But, indeed, the majority of mankind walk through the world without seeing a hundredth part of what is before them. An inquiry into the wonderful structure of living beings, from the huge elephant to the most minute insect, and the beautiful and perfect adaptation in each case to the place of habitation, and the instincts implanted in the animal, must tend to develop reverence and thankfulness to the Author of our being, and lead us up "from Nature to Nature's God."

The science of Natural History was comparatively unknown to the ancients, and its interest and importance unrecognised. "With the exception of Aristotle," says Colonel Hamilton Smith, "neither the philosophers of antiquity, nor those of the ages succeeding the revival of learning, prosecuted the study of living nature with that accuracy of observation, and reference to organic structure, so indispensably necessary for distinguishing by just analogy, and determining by definite characters, the classes, orders, genera, and species of the vast assemblage of animated beings. Within the first quarter of the last century there were still writers, and there were religious institutions in force, classing otters, seals, whales, herons, and ducks, with fish; and in law we even now admit whales by that name; while in our markets, oysters, limpets, lobsters, and crabs continue to be called shell-fish. In this respect, notwithstanding the valuable example placed before him by the mighty Stagyrite, we find the great Buffon

viewed nature, and in particular zoology, more in the manner of a rhetorician, who had discovered a new field of eloquence, than as a true naturalist, who sees the connecting links of affinity, and by them demonstrates the relations organised bodies have to each other. In his magnificent descriptions of animals, he long persisted to disregard all classification, although Ray had pointed out the way so early as 1683; and Artedi, and in particular Linnæus, had called the attention of all scientific men to the system of arrangement known by his name." Cuvier and other eminent naturalists have since made great improvements in the classification.

Animals are now divided into those with back bones, *vertebrata*, and those without them, the *invertebrata*. The *vertebrata* are divided into four *classes*:—1st, animals which suckle their young, called *Mammalia*; 2nd, Birds; 3rd, Reptiles; 4th, Fishes. Each of these classes is divided into *orders*; and each order is subdivided into smaller groups called *families*; each of these families into still smaller groups called *genera*; which are again divided into *species*, agreeing in certain essential characters; and these species are divided into *varieties*, which differ somewhat from each other, but not sufficiently to constitute distinct species.

The most important class in the Animal Kingdom is the *Mammalia* (by some Anglicised into the term *Mammals*), which term was first employed by Linnæus to designate all those animals which are provided with organs to suckle their young.

In the *Mammalia*, the nervous system is concentrated in a true brain (*cerebrum* and *cerebellum*) and a spinal

cord ; the heart consists of two auricles and two ventricles ; the blood is red and warm ; the respiration is atmospheric ; the lungs are free in a true chest ; the jaws are furnished, as a rule, with true teeth ; the limbs are usually four, sometimes two ; their habits are arboreal, terrestrial, or more or less aquatic ; and the limbs accordingly modified.

Within the class of the *Mammalia* the Porpoises, Whales, Lamantins, and Dugongs are included—animals essentially aquatic as far as *habitat*, or place of abode is concerned, but no farther.

The *Mammalia* are placed at the head of the vertebrated series in the Animal Kingdom, for even excluding man we find among them the greatest number of faculties, the most delicate sensations, the most varied action, and an aggregate of properties for the production of intelligence ; they are the most fruitful in resources, least dependent upon mere instinct, and most susceptible of progressive improvement. With but a moderate quantity of respiration, they are, in general, intended for locomotion, by walking with strength and continuity, and hence all the articulations of their skeletons have the forms very exact ; thereby determining, with equal precision, the nature of their movements. Though the general form is intended for walking on the earth, some fly through the air, by means of membranes attached to their limbs and a supplementary structure fitted for that purpose ; while others have the extremities so short that they move with ease only in water ; but both retain, in every other respects, all the general characters of the class. Among

these “Beasts of the Field,” some startle us by forms and actions so much resembling our own as to excite unpleasant comparisons; while others cause just apprehensions by their evident powers of mischief, or excite our astonishment by their huge bulk; and others again, are companions of our sports, helpers in our toils, or supply us with food and clothing, and the raw material required for so many of our manufactures.

In the *Mammalia* are nine orders, namely—

1. Two-handed(*Bimana*)..... Man alone.
2. Four-handed(*Quadrumana*)..... Monkey, ape, lemur.
3. Flesh-eating(*Carnivora*)..... Lion, ferret, dog, seal, &c.
4. Pouched(*Marsupialia*)..... Kangaroo, opossum, &c.
5. Gnawers(*Rodentia*) Rat, rabbit, beaver, &c.
6. Toothless(*Edentata*) Sloth, armadillo, &c.
7. Thick-skinned(*Pachydermata*) ... Hog, rhinoceros, elephant,
horse, &c.
8. Ruminants(*Ruminantia*) Camel, ox, deer, giraffe,
sheep, &c.
9. Whale-like(*Cetacea*)..... Whale, porpoise, manatee.

In the following chapters we shall describe the most striking animals among the *Mammalia*, reserving many smaller but not less interesting, with the domestic animals, and the *Amphibia* and *Cetacea*, for other volumes. Our zoological societies and menageries are now so numerous that it may seem almost superfluous to describe many forms so well known; but our readers must bear in mind that works like this are read in remote villages and distant regions never visited by a travelling menagerie, and excuse descriptions of forms to them familiar, for the sake of those to whom they are unknown.

CHAPTER II.

THE ELEPHANT.

THE Elephant is the only existing genus of *Proboscidiæ*, or pachydermatous Mammalia, with a proboscis and tusks, the other genus named Mastodon being extinct, and is the largest of living terrestrial animals. It has been from time immemorial under the dominion of man, having been used in his wars, as his beast of draught and burden, and even to attack and capture its own species. Those in a domestic state are tended with the greatest care and luxury, and a favorite and tractable Elephant is very valuable.

There are only two species of Elephants extant, but a third is found in a fossil state. The Asiatic species is confined to India, Ceylon, Cochin-China, Siam, Pegu, Ava, and the larger adjacent islands; the African is spread over the expanse of Africa, from Senegal to the Cape of Good Hope. The specific distinctions are not very conspicuous. The head of the Asiatic species (*Elephas Indicus*, Cuvier) is oblong, with the forehead concave; the ears are comparatively small, and the hind feet have four hoofs. The African Elephant (*Elephas Africanus*, Cuvier) has a rounder head with a convex forehead; its ears are so large as to cover the

whole shoulder; it has three hoofs to each hind foot, and its tusks are usually larger than those of the Asiatic species. There are also differences in the laminæ of the teeth.

The most remarkable features are the trunk and tusks. The Elephant cannot browse on the leaves of trees or bushes as do the rhinoceros and hippopotamus, for the tusks and their sockets prevent the application of the mouth. It is, therefore, endowed with a proboscis or trunk—at once a delicate organ of prehension, a strong grasper, an arm of offence, and a pump for the suction of water. This proboscis may be regarded as a muscular prolongation of the nostrils, into which the upper lip also is blended. It is of a tapering subconical form, and has internally two perforations. On the upper side of the extremity, immediately above the partition of the nostrils, is an elongated process, which may be considered as a finger; and on the under edge is a sort of tubercle, which acts as an opposable point; in short, as a thumb. Composed of thousands of muscles variously interlaced, this organ possesses the most complicated powers of motion, of extension, and of contraction, and is besides endowed with exquisite sensibility. Nearly eight feet in length, and stout in proportion to the massive size of the whole animal, this organ, at the will of the Elephant, will uproot trees or gather grass, raise a piece of artillery or pick up a pin, kill a man or brush off a fly. It conveys its food to the mouth, and pumps up enormous draughts of water, and when the two cavities are filled, curves it round, inserts the extremity into its mouth, and drives

the water down its capacious throat, or discharges it in a cooling shower over the body. Its length supplies the place of a long neck, which would have been incompatible with the support of the large head and weighty tusks. A glance at the head of an Elephant will show the thickness and strength of the trunk at its insertion, and how admirably the massive arched bones of the face, and thick muscular neck, are adapted for supporting and working this powerful and wonderful instrument.

When an Elephant has collected so small a quantity of grass or herbage that it is not worth while to convey it by itself separately to the mouth, he places it behind the thumb-like projection above described, while with the finger he gathers more. M. Houel thus speaks of this habit:—"One of the Elephants seeing me look at him attentively, stretched out his trunk, as if to ask for something to eat. I looked about, and having found a bunch of carrots, picked out the smallest and gave it to him. He noticed my intention, and made me understand that so small a carrot did not deserve the trouble of folding his trunk in order to carry it to his mouth; for he took the carrot with his finger, and immediately passed it behind the thumb, turning back the latter so as to hold it securely. He then extended his trunk for another supply. I gave him another small carrot, which he put into the same place as the first; I gave him another, and then he bent his trunk and put all three into his mouth. On giving him larger carrots he united two for a mouthful, but the largest of all he took single."

The first tusks are shed between the age of one and two years, when they have obtained the length of three or four inches, and are replaced by the permanent ones, which sometimes reach an enormous size. They are composed of conical layers, set in one after the other, the interior being the last produced. The base is hollowed into a conical cavity, prolonged into a narrow canal, which runs along the centre of the tusk, and is filled with a blackish matter. The outward layer is true enamel, but is not harder than the central part of the tooth or the ivory. They are without true roots, and have no other union to their deep sockets than that of close contact, and resemble a nail driven into a plank. They vary in size and curve. In the African species they are generally very large, sometimes even in the female; but in the female of the Asiatic species they are small. The tusks of the Indian Elephant seldom exceed 72lbs. in weight—some are not more than 50lbs.; there are, however, in London tusks, probably from Pegu or Cochin-China, which weigh 150lbs. The largest recorded in Cuvier's table was a tusk sold at Amsterdam, which weighed 350lbs.

To supply the general demand for ivory vast numbers of Elephants are shot by the natives of Africa, India, Ceylon, &c. The balls are usually made of an equal mixture of tin and lead, as lead balls generally flatten against the skin or bones. It is stated that in Sheffield alone upwards of 45,000 are annually consumed, weighing 180 tons, and valued at £30,000. The workers in ivory in that town are above 500 in number.



SHOOTING ELEPHANTS,

The form of the head varies with age, and increases immensely in the adults. The eyes are very small, with round pupils, and have a piggish expression, but are quick and lively. The skin is thick and hard, dry, and wrinkled into folds about the setting on of the legs, and on the neck and breast. It is of a brownish-gray colour, sometimes slightly mottled with flesh colour, and thinly set with rigid hairs of a somewhat similar tint, which are most abundant on the head. Like other animals, the Elephant is subject to variation of the general colour, and some of a reddish hue are met with; but this has been attributed to extraneous matter received upon the skin by rubbing, though, as a variety, it is still asserted by some to exist naturally. A similar kind is found in Africa. The white Elephant is not a distinct kind, but is occasioned by albinism, or the absence of the ordinary colouring matter of the skin, and is the most valuable, held even in veneration, and always brings a most extravagant price.

The Elephant possesses the senses of sight, hearing, taste, and smell in great perfection, and in a state of nature lives in herds, under the conduct of adult males. They feed on herbage, maize, twigs, and roots, and often commit serious depredations.

The female brings forth only a single offspring at a birth. The young sucks in the usual way with the mouth, turning its trunk over backwards, the teats of the mother being situated between the two fore legs. The young animal grows very rapidly at first; by the second year it has reached a height of four feet; after this period it increases more slowly, till it has attained

their efforts more effectual. One of these animals can carry a small building like a tower, with ten or twelve men in it. The driver, who is called a *mahout*, rides upon its neck, and gives it the word of command. If the "half-reasoning elephant" arrives at ground that appears insecure, it will not venture on till it has tapped and tried it with its trunk. And although a full grown Elephant has a most unwieldy appearance, his activity and speed are very great, a swift horse being sometimes unable to outrun him. Elephants are also employed in hunting the tiger, as described in Chapter VI.

A large volume might be filled with authentic anecdotes of this wonderful animal's sagacity, sense of justice, and kindness when kindly treated.

Dr. Franklin says, "I have myself seen in India the wife of a *mahout* confide the care of a very young child to one of these gigantic creatures. I was very much amused by observing its sagacity, and the delicate attentions this huge nurse lavished on the little thing entrusted to it. The Elephant undertook its task in earnest. The child, which, like many other children, did not at all like to remain long in the same position, and wanted to be noticed, set to work and cried the moment it was left to itself. Sometimes it got in between the animal's legs, or became entangled in the branches of the tree, on the leaves of which the elephant was feeding. The animal on these occasions moved the child, and disentangled it from the branches with wonderful tenderness, either by raising it with its trunk, or by moving out of its way the obstacles which might interfere with its movements."

The Elephants which are exhibited in theatrical representations display great intelligence. They move over the boards with extraordinary lightness for such enormous animals. On a stage crowded with actors they avoid any blunders which might interfere with the stage arrangements, advance with measured paces, keeping time with the music, and distinguish one actor from another.

There was in Paris, in 1867, an Elephant performing at the Circus of the Boulevard du Prince Eugène, which went through various gymnastic exercises and feats of address that displayed wonderful docility and intelligence. This creature, which was called *L'Éléphant ascensioniste*, had been actually trained to balance its huge bulk on a tight-rope, like Blondin.

Buffon relates the following anecdote: "A painter, wished to make a drawing of the Elephant of the menagerie of Versailles in an extraordinary attitude, which was with its trunk elevated in the air, and its mouth wide open. The painter's servant, to make it remain in this attitude, kept throwing fruit into its mouth, but oftener pretended to do so. The Elephant was indignant at this treatment, and as if it knew that the painter's desire of making a drawing of it was the cause of its being thus annoyed, instead of revenging itself on the servant, addressed itself to the master, and discharged at him, through its trunk, a quantity of water, with which it spoiled the paper on which the artist was drawing."

"Some Elephants," says M. Figuer, "possess a taste for music. In 1813, the musicians of Paris met

together and gave a concert to the male Elephant, which was then in the Jardin des Plantes. The animal showed great pleasure at hearing sung *O ma tendre Musette!* But the air of *La charmante Gabrielle* pleased it so much that it beat time by making its trunk oscillate from right to left, and by rocking its enormous body from side to side; it even uttered a few sounds more or less in harmony with those produced by the musicians. Grand symphonies were less to its taste. It seemed to understand melody more easily than scientific harmony. I know more than one man who is an Elephant in this respect. When the concert was over, the sensible pachyderm approached one of the musicians, who by his performance on the horn had particularly affected it. The animal knelt down before him, caressed him with its trunk, and expressed to him in all sorts of pretty ways the pleasure which it had felt in listening to him." / 5 -

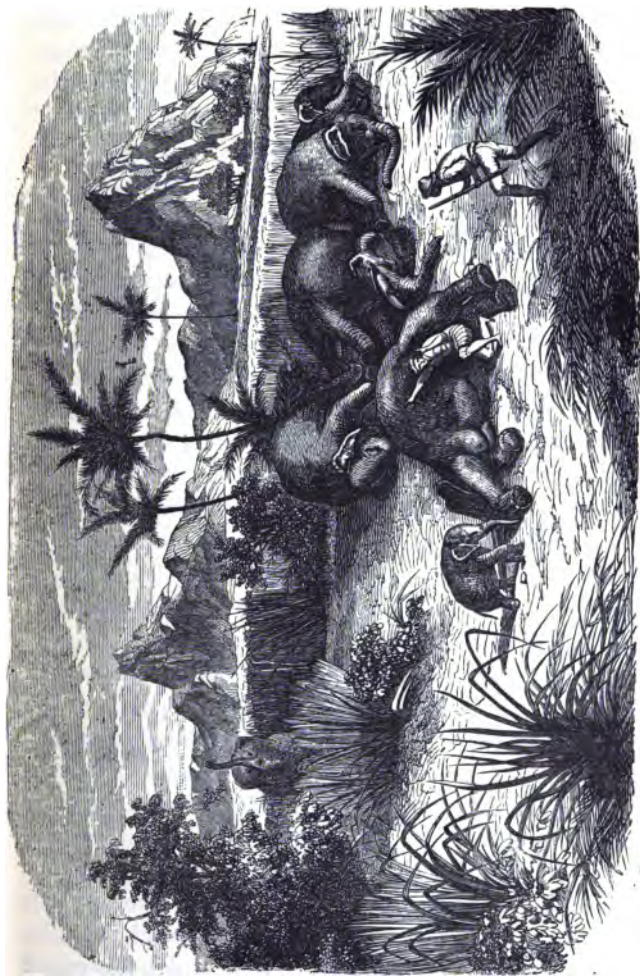
Although Elephants breed in captivity, the greater number of those in use have been taken wild, and tamed. Various methods have been devised for their capture, and they do not appear to display the same active intelligence which they show on many occasions in a tame state, or to be so timorous and wary as African travellers describe the animal of that country. One of the most commonly employed means of capture is driving them into a *keddah*, or enclosure, with a wide or extensive opening, which is gradually narrowed. There is a broad ditch, too wide for an Elephant to stride over, of a considerable depth, and around, on the outside, is a paling of large timbers,

well bound with strong battens, and supported by props at suitable distances, forming an immense bulwark. When a large herd of Elephants is discovered, or when two or more small herds are found so near to each other as to be easily brought together, the people of the neighbouring country, who in general receive regular wages for their aid, are collected to surround them, and often assemble to the number of six or eight thousand men, with firearms, drums, trumpets, fireworks, and, in short, anything that can intimidate the herd. The whole body moves slowly towards the funnel, in which is strewed a small quantity of those fruits and vegetables in which Elephants delight, such as plantains, sugar-canes, &c. Many days are frequently required to drive a herd, and sometimes the Elephants are driven thirty or forty miles. The circle is gradually narrowed as the funnel is approached, and when fairly within, the funnel itself forms a part of the circle. They begin to taste some of their favorite foods, which being quickly consumed, some by degrees venture into the *keddah* itself; the example is soon followed, and but little coercion is required now to urge the whole within the paling, which is then secured with strong bars.

At one period the manner of subjection, after the animals were thus enclosed, was by starvation, binding their legs with strong ropes, and gradually accustoming them to the individual who was afterwards to have them in charge. It has, however, been found to be much more advantageous to entice them by kindness; by this treatment they are sooner subjected, and are

not liable to be rendered useless from the cutting wounds inflicted by the ropes with which they were bound, and which, in a warm climate, ulcerated to a great extent, and often proved fatal. When in a proper state to be removed, tame males or decoy females are used, which lead him to the place where he is to be picketed; here the *mahout*, or keeper, redoubles his care and caresses, and seldom fails to become a favorite, and often an object of great attachment to the animal.

The most singular method, however, which has been adopted for taking Elephants, is by the assistance of decoy females, which enter into the business as if they were as much interested in it as their owners. This is chiefly practised with those males which have been driven off from the herd and are wandering about by themselves; they are known by the title of *sauns*, and are valuable to dealers, being the second in size and strength to the leader of the herd. Two decoy Elephants, or *koomkies*, as they are termed, are generally employed in this business, attended by the *mahout* provided with a black covering and strong ropes. When the wild animal is discovered, the decoys approach as near as possible, the *mahout* mounted, covered with his cloak, and crouching. When afraid of discovery he slides down, and the females proceed alone on their treacherous errand, in which they generally succeed so well by caresses as to distract the attention of the animal, and thus enable the men to bind his legs. Sometimes, during the caresses, he is led towards a tree, and his bonds made fast to it. The clasps for the hind legs are made with a joint in the middle, and



THE DECOY ELEPHANTS.

studded in the inside with short nails, which inflict much pain when the animal begins to struggle, and ultimately oblige him to desist. In case of the men being discovered during the operation of binding, the tame Elephants will attack and restrain the wild animal until they escape; and instances are even told of their having suffered death in defence of their keeper. If the binding is successful, the animal is left to himself during the first day, and, on discovering his position, vents his anger and disappointment in struggles and incessant roaring, refusing all sustenance or kindness. Thirst and exhaustion, however, begin to tame him, and he gradually receives water, and the same tame animals which captured him, with their keepers, by degrees win upon him by pampering his appetite, and doing him various acts of kindness. Before being liberated, large ropes are fastened round his body. When still troublesome—and they sometimes make furious attempts to escape—the leading Elephant proceeds as quickly as possible, while others goad him behind, and the *mahouts* spur them on.

Another method of catching Elephants, mentioned by Colonel Williamson, as practised in Nepaul and the frontier countries, is by a kind of lassoing, or throwing a slip-knot over the head of the animal to be captured. Two Elephants are employed, selected for their size and speed, males being preferred. Each *mahout* is provided with a slip-knot of very strong rope, about two inches in circumference, and ten or twelve yards in length, exclusive of what is passed round the Elephant's body. At the end of the rope, which lies coiled

on the Elephant's head, is a sliding noose, that works freely, and has affixed to it a strong cord, for the purpose of relaxing its hold, as occasion may require. When the herd is discovered, the director of the hunt singles out the one to be lassoed; and in this he is regulated by the size of his Elephants, for he might be run away with by one larger and stronger than his own. The *mahouts*, who are accustomed to the business, are extremely expert, and rarely fail to throw the knot over in the most effectual manner, causing it to light fairly round the brows and behind the ears of the Elephant, which instinctively curls up its trunk, whereby the lower part of the knot slips under it, and completely encircles the neck. The Elephant is impeded, and time is thus given for the second hunter to come up on the other side and fasten his rope, which, being better tightened, impairs the power of breathing, or stops respiration so as to cause the animal to fall, and become a captive. He is afterwards led to his picket, sometimes with the utmost difficulty and danger, but is almost always at last overcome, temporary strangulation being again resorted to.

CHAPTER III.

THE RHINOCEROS.

AMONGST the *Pachydermata* the genus Rhinoceros holds a conspicuous place. The animals of this genus, though inferior in size to the elephant, astonish by their massive and clumsy figure, and by the tremendous strength displayed when their energies are roused by aggression. It is generally thought by the ablest commentators that the unicorn or reem of Scripture is the Rhinoceros, and though this opinion be not absolutely proved, it is, at all events, probable.

The genus Rhinoceros contains six living specimens, as far as naturalists are able to determine, and nine fossil species have been recorded, the relics of which are found in the same strata that contain those of the fossil elephant. They vary from five feet to five and a half in height at the shoulder, and from eleven feet to twelve feet in length of body and head. The general contour and proportions of the Rhinoceros have long been known; but the earlier figures of the animal were to a certain extent incorrect and exaggerated. When living specimens are not accessible, artists and naturalists are liable to mistakes, which are too often

perpetuated, and which, indeed, are not always easily eradicated.

Clumsy, massive, and low on the limbs as it is, the Rhinoceros is more prompt and rapid in its movements than its uncouth form would lead a person unacquainted with its habits to anticipate. In sluggishness of appearance it is, indeed, exceeded only by the hippopotamus. The body is protuberant, the belly almost touching the ground; the back falls from the withers and rises again on the crupper; the head is a ponderous mass, supported by a short and powerful neck; the shoulders are massive, and the limbs present the appearance of short stout pillars for the superincumbent weight to be sustained. The feet are divided into three toes, encased each in a solid hoof. In its whole appearance the Rhinoceros reminds us of a huge hog, and its heavy movements contribute to strengthen the resemblance.

On each side of the hinder summit of the head are placed the ears, which are large, open, pointed, and very movable, the animal being able to freely turn them in every direction; and thus its sense of hearing, as might be expected, is extremely acute. The eyes are very small, but bright and prominent; their situation is remarkable, for they seem as if placed rather on each side of the snout than in the ordinary position, being, in fact, nearer to the muzzle than in most animals, so that a slight turn of the head brings an ample circuit within their range of vision.

But that which gives most character to the head of the Rhinoceros is the horn, which is single in some

species and double in others. This horn is placed in a situation of which it is the only example, being seated on the nasal bones, which are of a thickness and solidity not to be found in any other race of quadrupeds. In the two-horned species the posterior horn rests on the *os frontis* or frontal bone. It is of a conical shape, curving backwards. The single or principal horn, where there are two, is sometimes nearly three feet in length, and, though a blunt looking instrument, when wielded by an animal of such bulk and strength, is made to force its way through almost any resistance. This organ differs in structure from that of every other animal, being composed of parallel fibres, which are analogous to hair agglutinated into a solid mass, and have much resemblance to those into which whalebone is so easily separable. At its base it is, in most instances, evidently rough and fibrous, like a worn-out brush. It grows from the skin only, in the same manner as the hair, is without any surrounding horny sheath or socket, and is unconnected with the bone of the skull. At the tip it appears less fibrous, this part being always worn down by continual rubbing, and thus having a considerable degree of polish. From this formation it is not at all extraordinary that the Rhinoceros should possess the power of moving it to a certain degree, since the hog, to which, in the natural arrangement, it so closely approaches, has a much greater power of moving its bristles, which, if united, would form a horn of the same nature. All the African species, and one of the Oriental, have a second horn, which is placed behind the first, and is shorter in the

Indian species and in one of the African, the other two having horns of about equal length.

On the ears there are a few stiff bristles, and similar bristles fringe the tail on each side at its tip; with these exceptions the skin is naked, and of a dark grayish black, with a slight tinge of purple. Hard and dense as this integument is, it is, nevertheless, far from being destitute of sensibility, and the animal is constantly annoyed by the bites and stings of insects, which abound in the swampy places which it inhabits; and it is to protect himself against these petty but multitudinous tormentors that he rolls in the slimy marsh, so as to cover the body with a layer of mud, which not only resists their attacks, but at the same time also defends the skin from the effects of a burning sun; hence the partiality of the Rhinoceros for localities which abound with water. It is not, however, only in the mud bath that the animal revels, for he delights in the water itself, and swims with ease and vigour. But independent of the instinctive partiality which this animal manifests for the swamp or border of the river, necessity restricts him to such localities; the quantity of vegetable food and water he requires is very great, and in such places, beneath an Indian sky, nature provides him with a never-failing magazine of food. Suppose an animal requiring for his daily support from sixty to seventy pounds' weight of vegetable matter, and fourteen or fifteen gallons of water, were placed in the midst of a scantily watered district, with a meagre crop of herbage, slowly renewed, it is easy to imagine the straits to which he would be soon reduced.

Providence, however, in appointing every animal to a given locality, makes no such errors, and in endowing the huge Rhinoceroses with instincts leading them to affect the water, at the same time places the means of sustenance immediately within their reach. Where they exist there alone are they fitted to exist, and to that spot are they bound by instinct.

Of all the *Pachydermata* the Indian Rhinoceros is most distinguished for the density of the skin; nor does it lie smooth over the body, as in the African species or the hippopotamus, but it is thrown into large folds, which add to the uncouth appearance of the animal, and form a sort of armour, very difficult to be pierced; hence it is manufactured into shields and the like. The arrangement of the folds, or rather solid plates with folded edges, is as follows:—Around the neck, which is short and deep, the skin forms two deep folds, of which the last hangs over the front of the chest. The shoulders are covered with a thick hard plate falling in a fold over the top of the fore limbs, and separated also by a deep posterior fold from the plate covering the body; this is folded across the top of the crupper, the fold running down just before the haunch bones, and losing itself on the belly. The crupper-plate is divided by a longitudinal fold running to the root of the tail on each side, from a large crural or leg plate, which hangs in a deep fold over the thighs. Between the folds the skin is soft and flexible, and of a pale pink or flesh colour; but everywhere else it is hard and dense, and covered with tubercles or horny incrustations; hence, were it not for these folds.

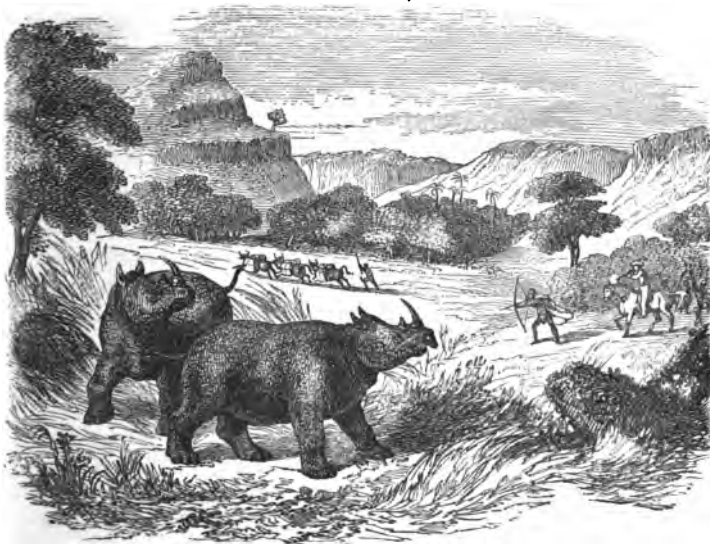
the animal would be necessarily limited in his motions. Dr. Parsons observes, that if the skin, thus hard and inflexible, were "continued all over the creature, as the skins of other animals, without any folds, he could not bend any way nor perform any necessary action; but that suppleness in the skins of other quadrupeds, which renders them flexible in all parts, is very well compensated in this animal by those folds; for since it was necessary his skin should be hard for his defence, it was a noble contrivance that his skin should be so soft and smooth underneath that, when he bends himself any way, one part of his board-like skin should slip or shove over the other, and that these several folds should be placed in such parts of his body as might facilitate the performance of every voluntary motion he might be disposed to." The hide of the African species, though thick and dense, is not thrown into heavy solid shields as in the common Indian species, and would appear to be much more easily pierced. The African are also distinguished by their blind ferocity and malignity, while the Asiatic are dull, peaceable, and inoffensive.

Sluggish in his habitual movements, the Rhinoceros wanders through his native plains with a heavy step, carrying his huge head so low, that his nose almost touches the ground, and stopping at intervals to crop some favourite plant, or, in playfulness, to plough up the ground with his horn, throwing the mud and stones behind him. The jungle yields before his weight and strength, and his track is said to be often marked by a line of devastation. As they are animals which depend

much upon smell for their existence and safety, it is necessary to advance upon them from the leeward side, if it be wished to get close without being discovered. In pursuit they also trust for guidance to the same sense, and they may be heard forcibly inspiring the air when they have lost the scent of the object they were following. The ticks and insects with which they are covered furnish them another source of intelligence, by attracting a number of birds, which sit quietly picking them off when nothing strange is in sight, but fly away when any object excites their fear. So well does the Rhinoceros understand this, that he proceeds feeding with the greatest confidence while the birds continue perched upon his back; but the moment they fly the huge animal raises his head, and turns it in all directions to catch the scent. Whether he accomplishes that or not, he generally feels so uncertain of his position, that he moves to some other locality. Alluding to the organs of the senses, F. Cuvier observes, respecting that of touch, that it is confined to the upper lip, adding that all the other senses appeared to be tolerably acute. "He frequently made use of that of smell, and preferred sugared fruits, and sugar itself, to every other aliment. He collected together the smaller morsels of food with his movable upper lip to carry them to his mouth; and when he ate hay he formed it with his upper lip into little bunches, which he afterwards introduced between his teeth by means of his tongue."

The Abyssinians, who are familiar with the animal's stupid and unvaried mode of charging, and who are excellent horsemen, attack the Rhinoceros on horseback,

and on an open plain, without fear. As the Rhinoceros rushes forward after the manner of the wild boar, the horse, which is well trained and in hand, is easily made



HUNTING RHINOCEROSES.

to turn short aside and avoid the shock ; on the instant a naked man drops from behind the hunter on the saddle, and, unperceived by the beast, which turns with difficulty, cuts at a blow with a sharp sword the tendon of the heel, so as to render the poor animal incapable of flight. Mr. Burchell describes an ingenious mode adopted by the hottentot hunters of escaping from its impetuous attacks. They carry a sort of umbrella, made of ostrich plumes, and this, when hard pressed and

in imminent danger, they stick into the ground, and leave it to the fury of the enraged beast, which, imagining that its enemy is planted before it, makes the feather-stick, as it is called, the object of attack, the hunter in the mean time being enabled to effect his escape, or gain time for a second attempt to kill the animal. Its flesh is by no means despicable as food. Sparrman observes that its flavour, when broiled, is not much unlike that of pork, in which he is supported by Bruce, who states that "the most delicate part about him is supposed to be the soles of his feet, which are soft, like those of a camel, and of a gristly substance. The rest of the flesh seems to resemble that of the hog, but is much coarser." Mr. Burchell, however, says that its flesh is like beef, and adds, "The tongue would have been pronounced a dainty treat, even by an epicure."

The Rhinoceros is capable of domestication. Bishop Heber, while at Baroda, observes—"In passing through the city I saw two very fine hunting-tigers in silver chains, and a Rhinoceros (the present of Lord Amherst to the Guicar), which is so tame as to be ridden by a *mahout*, quite as patiently as an elephant." Previously, however, he had seen tame Rhinoceroses, and noted their tractable disposition. But the natural sluggishness, conjoined with his liability to sudden outbursts of rage, during which he would deal destruction around him, are circumstances which must ever prevent his being used as an ordinary beast of burden, even where he can be easily procured.



Lion.

Lioness.

Tiger.

Tigress.

CHAPTER IV.

THE LION.



THE Lion belongs to that large tribe of animals which walk on their toes, and most of which are carnivorous. It is of the family of *Felinæ*, or the cat kind. Zoologists differ in the arrangement of the genera; but the whole family may be popularly divided into lions, tigers, leopards, lynxes, and wild cats, or cats properly so called, the two latter terms being more particularly applicable to the smaller forms.

Although poets and poetical zoologists have joined to elevate the Lion to the sovereignty of beasts, it may be doubted whether the Bengal tiger (*Felis tigris*) has not an equal, if not superior claim to the throne, and to the chieftainship of the ferocious and bloodthirsty genus *Felis*. Ferocious as the tiger is, and much as it may deserve the odium heaped upon it, the general chorus of authors who eulogise "the courage, greatness, clemency, and generosity" of the Lion, contrasting it with the unprovoked ferocity, unnecessary cruelty, and poltroonery of the tiger, in its sudden retreat on any disappointment, becomes ridiculous, though led by such names as Buffon and Pennant. The Lion has owed a good deal to his mane and his noble and dignified

aspect; but appearances are not always to be trusted. "Nor is the title of King of the Forest," says Mr. Burchell, very applicable to an animal which, by myself



HEAD OF THE LION OF SENNAAR (FRONT FACE).

at least, was never met but on the plains, and certainly never in any of the forests where I have been."

The Lion is at the present day confined to Africa, Arabia, India, Persia, and the borders of the Euphrates, but was formerly common in Egypt and Syria, and also in several portions of eastern Europe. Africa exhibits the Lion in all his grandeur; and in many an

unknown desert he reigns with undisputed sway over the more feeble animals. The African race is characterised by larger size, more regular and graceful form, generally darker colour, less extensive mane, and greater power, fierceness, and boldness than the Asiatic. The varieties of the African Lion are—1. The Lion of Barbary, which is distinguished by a deep yellowish-brown fur and very much developed mane. 2. The Lion of Senegal, which is characterised by a yellower tint, less thick mane, and almost wanting the shaggy hair on the breast and insides of the legs. 3. The Cape Lion, of which there are two races, one yellowish and the other brown, the latter being the most formidable. There is also a black-maned race. The Asiatic varieties are—1. The Bengal Lion, which is characterised by a very large mane. 2. The Persian, which is distinguished by the pale colour of the fur. 3. The maneless Lion of Gurjerat, which is remarkable for the comparative absence of a mane from the sides of the neck and shoulders, the middle line of the back of the neck alone having longer hairs, which are erect. The tail is shorter, and has a much larger tuft.

The form of the Lion is strikingly bold and majestic; his large and shaggy mane, which he can erect at pleasure; his huge eyebrows; his round and fiery eyeballs, which, upon the least irritation, seem to glow with peculiar lustre, together with the formidable appearance of his teeth, give him an aspect of terrific grandeur, which it is difficult, if not impossible, to describe. His roaring is loud and dreadful; when heard in the night it resembles distant thunder. His

cry of anger is much louder and shriller. The length of the largest Lion is about eight feet, his tail about



THE MANELESS LION.

four, and his height about four feet and a half. The mane grows longer and thicker as he advances in years. The hair of the rest of his body is short and smooth, of a uniform tawny colour, varying in intensity almost to brown; but the young are obscurely striped or brindled. His tail is tufted at the end. The female is about one fourth part less in size than the male, and her form is much more slender and graceful; but the great distinction between the sexes is the absence of the ample

mane, and the lengthened hair which adorns the other parts of his body. In her motions the Lioness displays more agility, and her passions seem much more impetuous. She produces two or three cubs at a litter, which are born blind. The age to which the Lion naturally lives is doubtful, but is generally supposed to be twenty or twenty-two years. It is, however, asserted that Pompey, the great Lion which died in the Tower in 1760, was above seventy years of age, and another from the Gambia is stated to have attained the age of sixty-three.

The Lion is one of the most indolent of all beasts of prey, and never gives himself the trouble of a pursuit unless hard pressed by hunger. He seldom attacks any animal openly, except when compelled by extreme hunger, in which case no danger deters him. But as most animals endeavour to avoid him, he is obliged to have recourse to artifice, and take his prey by surprise. For this purpose he crouches in some thicket, where he watches till his prey comes sufficiently near, and then, with one prodigious spring, he leaps upon it from a distance of fifteen or twenty feet, and generally seizes it at the first bound. Should he happen to miss his object he gives up the pursuit, returns to the place of his ambush with a measured step, and there lies in wait for another opportunity. His lurking-place is generally near a spring or river, that he may lay hold of the animals which come thither to quench their thirst.

His strength is immense. It is asserted on good authority that he is able to drag away a heavy ox ; and a young heifer is carried off with ease. Sparman

relates an instance of a Lion, at the Cape of Good Hope, "seizing a heifer in his mouth, and though the legs dragged upon the ground, yet he seemed to carry her off with the same ease as a cat does a rat. He also leaped over a broad dike with her, without the least difficulty." The smaller prey is generally thrown upon the shoulders, and carried at an ambling pace with great apparent ease. Thompson, a traveller in South Africa, saw a very young Lion convey a horse about a mile from the spot where he had killed it, and relates a more extraordinary instance of strength, which occurred in the Sneeuwberg :—"A Lion having carried off a heifer of two years old, was followed, on the spoor or track, for fully five hours, by a party on horseback, and throughout the whole distance the carcase of the heifer was only once or twice discovered to have touched the ground."

Van Wyk, one of the Dutch settlers at the Cape of Good Hope, gave the following account of a visit which a Lion one day made to him and his family :—"My wife," said he, "was sitting within the house, near the door; the children were playing around her, and I without, near the house, busied in doing something to a waggon, when suddenly, though it was midday, an enormous Lion appeared, came up, and laid himself quietly down in the shade, upon the very threshold of the door. My wife, stupified with fear, or aware of the danger attending any attempt to fly, remained motionless in her place, while the children took refuge in her lap. The cry they uttered, however, attracted my attention, and I hastened towards the door; but my

astonishment may well be conceived when I found the entrance to it barred by the Lion. I glided gently, scarcely knowing what I meant to do, to the side of the house, up to the window of my chamber, where I knew my loaded gun was standing; by a happy chance it was in the corner, close to the window, so that I could reach it with my hand, for the opening was too small for me to get in. I snatched it up. The Lion was beginning to move, perhaps with the intention of making a spring. There was no longer time to think. I called softly to the mother not to move, and, imploring the help of the Lord, I fixed my gun, and fired. The ball passed directly over the hair of my boy's head, and lodged in the forehead of the Lion; he was stretched on the ground, and never stirred more."

The Lion, when taken young, is easily tamed, principally by mild and persuasive usage, and appears to possess more equality of temper than any of the other wild *Felinæ*. "Nero," well known in Wombwell's menagerie, was of a remarkably mild disposition, and allowed his keepers every liberty; strangers were frequently introduced into the den, the visitors riding and sitting on his back. Nero, during the time, preserved a look of magnanimous composure, and on the entrance or exit of a new visitor, would merely look slowly round. "But the most docile Lion which has occurred to our own observation," says Sir William Jardine, "was one in a travelling menagerie at Amsterdam, where, it may be remarked, that all the animals showed a remarkable degree of tameness and familiarity. The Lion alluded to, after being pulled

about and made to show his teeth, &c., was required to exhibit. Two young men in fancy dresses entered the spacious cage, and in the mean time the Lion, apparently perfectly aware of what he had to do, walked composedly round. He was now made to jump over a rope held at different heights, next through a hoop and a barrel, and again through the same covered



HEAD OF THE LION OF SENNAAR (PROFILE).

with paper. All this he did freely, compressing himself to go through the narrow space, and alighting gracefully. His next feat was to repeat the leaps through the hoop and barrel with the paper set on fire. This he evidently disliked, but with some coaxing went



THE LION DEVOURING A SERPENT.

through each. The animals were now all fed, but the Lion had not yet completed his share in the night's entertainment, and was required to show his forbearance by parting with his food. The keeper entered the cage and took it repeatedly from him; no farther resistance than a short clutch and growl was expressed; his countenance had, however, lost its serenity, and how long his good temper would have continued is doubtful. We did not previously believe that any of the *Feline* could have been so far tampered with."

The Lion does not disdain to prey on reptiles, which may lie in his path, nor on a goat, or other small animal; but he prefers the open plain, where large herds of antelopes and other creatures feed together.



CHAPTER V.

THE PUMA, OR AMERICAN LION.



HIS animal (*Felis concolor*) is in reality a large species of cat. The uniformity of its colour, combined with considerable ferocity, were probably the reasons which induced the early travellers in America, who heard of its destructiveness, perhaps, with circumstances of exaggeration, or caught hasty glimpses of it not unaccompanied with terror, to state that there were lions in America; and though it was not long before the error was corrected, the term American lion is continued. This animal is called, in the various languages of America, *Puma*, *Cuguacuara*, *Cuguacurana*, &c.; hence the French *Couguar*. It is also called the panther, from the resemblance of its habits to those of that animal. By the American backwoodsmen of the present day it is called the "painter," which word is, probably, a corruption of panther.

The adult male has no mane, and is of a silvery fawn colour above, sometimes reddish, the tawny hairs of the upper parts being whitish at the tips; it is nearly white beneath, and on the inside of the limbs; whitish on the throat, chin, and upper lip; the head black and gray irregularly mixed, and the ears on the

outside, and particularly at their base, the sides of the muzzle whence the whiskers spring, and the end of the tail, black. The tail has no tuft. The length from the nose to the tail is from four feet to four feet and a half, the tail rather more than two feet. The female is coloured like the male, but the head is small compared to his. The young have three chains of spots, which are generally of a blackish-brown, on the back, and dispersed spots or markings on the neck, shoulders, and sides. As the animal advances in age these markings become more and more obscure, till they are finally lost in the uniform colour.

There is another cat of a uniform colour (*Felis unicolor*, Traill), which is said to inhabit the forests of Demerara, and is one half less in size than the Puma. The Black Cougar (*Felis discolor*) is allowed by some zoologists and rejected by others. Sir William Jardine describes as the Black Puma an animal about thirty-three and a half inches long, without including the tail, which is about thirteen inches, and of which he gives a figure taken from a specimen brought in a merchant vessel to Greenock. Sir William adopts Puma as a genus, and gives six species.

The Puma, differs considerably from the other *Felinæ* in that part of the structure which is connected with the organs of voice, and, indeed, some according modification must be necessary to produce the deep-toned roar of the lion, the snarl of the jaguar, and the hissing cry of the Puma. The distance between the tongue and the larynx in the lion has been often remarked. In the jaguar this distance, comparatively

speaking, is nearly as great; but in the Puma, an animal equal, or nearly so, in size to the jaguar, the distance is reduced to an inconsiderable space, an inch or an inch and a half, according as the tongue is more or less protruded. The circumference of the larynx in the Puma is also very inconsiderable.

The Puma is insidious and ferocious, and when wounded becomes very dangerous to the hunter. It is a most destructive animal, for, unlike most of the other *Felinæ*, it is not satisfied with the seizure of a single prey, but when meeting with a herd of animals will kill as many as it can, sucking only a small portion of the blood from each, and has thus been said to kill fifty sheep in one night; and the squatter well knows the ravages that it will make among his hogs. Though an expert climber, it is said to haunt the marshy meadow-lands bordering on the rivers in South America rather than the forest. In the pampas it must frequent the comparatively open country, for there it is commonly taken with the lasso. In the northern districts the swamps and prairies are its principal haunts, and its prey where there are not flocks and herds, principally deer, for which it is said to lie in wait on the branches of trees, leaping down upon its prey as it passes below. Its agility is so great that at one bound it can spring upwards of twenty feet. It is choice in its diet; when it has eaten part of its slaughtered prey it covers up the remainder carefully with leaves; but if, on its return, it finds that the carcase has been touched by any other animal, it will eat no more of it. The flesh of the Puma is considered choice food by

those who are accustomed to it; and the skin makes excellent leather for the manufacture of ladies' boots and men's gloves.

It is rarely known to attack a man, and never does so, even when pressed by famine, unless it can leap upon him unawares. At times, when distressed by hunger, it will follow travellers on their route through the forest, but will turn and walk away when it finds itself discovered. The following curious encounter with a Puma is related by Sir Edmund Head, in his 'Journey across the Pampas :—' "The fear which all wild animals in America have of man is very singularly seen in the pampas. I often rode towards the ostriches and zamas, crouching under the opposite side of my horse's neck; but I always found that, although they would allow any loose horse to approach them, they, even when young, ran from me, though little of my figure was visible; and when I saw them all enjoying themselves in such full liberty, it was at first not pleasing to observe that, one's appearance was everywhere a signal to them that they should fly from their enemy. Yet it is by this fear 'that man hath dominion over the beasts of the field;' and there is no animal in South America that does not acknowledge this instinctive feeling. As a singular proof of the above, and of the difference between the wild beasts of America and the Old World, I will venture to relate a circumstance which a man sincerely assured me had happened to him in South America :—He was trying to shoot some wild ducks, and, in order to approach them unperceived, he put the corner of his poncho (which is a sort of long narrow

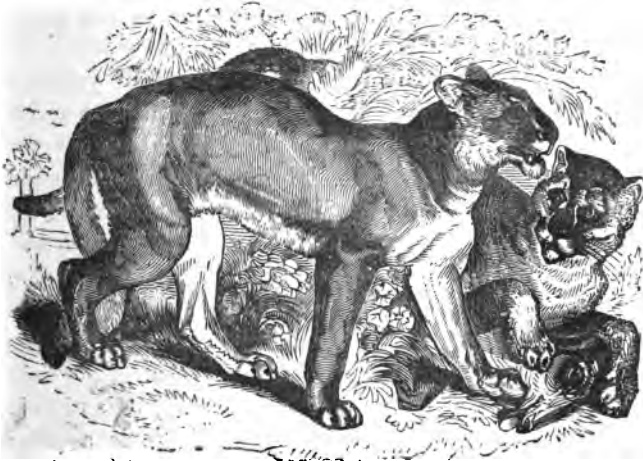
blanket) over his head, and crawling along the ground upon his hands and knees, the poncho not only covered his body, but trailed along the ground behind him. As he was thus creeping by a large bush of reeds, he heard a loud, sudden noise, between a bark and a roar; he felt something heavy strike his feet, and, instantly jumping up, he saw to his astonishment a large Puma actually standing on his poncho; and, perhaps, the animal was equally astonished to find himself in the immediate presence of so athletic a man. The man told me he was unwilling to fire as his gun was loaded with very small shot, and he therefore remained motionless, the Puma standing on his poncho for many seconds; at last the creature turned his head, and, walking very slowly away about ten yards, he stopped and turned again. The man still maintained his ground, upon which the Puma tacitly acknowledged his supremacy, and walked off."

The following incident from Griffiths' 'Cuvier' will show that encounters with them are sometimes fatal, and that the smart of a wound may occasionally rouse the courage of the most dastardly animal. It is probable that the shot fired by the hunter's companion had slightly wounded the Puma:—"Two hunters went out in quest of game on the Katskils mountains, in the province of New York, each armed with a gun and accompanied by his dog. It was agreed between them that they should go in contrary directions round the base of the hill, and that if either discharged his piece the other should cross the hill as expeditiously as possible, to join his companion in pursuit of the game shot

at. Shortly after separating, one heard the other fire, and, agreeably to their compact, hastened to his comrade. After searching for him for some time without effect, he found his dog dead and dreadfully torn. Apprised by this discovery that the animal shot at was large and ferocious, he became anxious for the fate of his friend, and assiduously continued the search for him, when his eyes were suddenly directed, by the deep growl of a Puma, to the large branch of a tree, where he saw the animal crouching on the body of the man, and directing his eyes towards him, apparently hesitating whether to descend and make a fresh attack on the survivor, or to relinquish its prey and take to flight. Conscious that much depended on celerity, the hunter discharged his piece, and wounded the animal mortally, when it and the body of the man fell together from the tree. The surviving dog then flew at the prostrate beast, but a single blow from his paw laid him dead by his side. In this state of things, finding that his comrade was dead, and that there was still danger in approaching the wounded animal, he retired, and, with all haste, brought several persons to the spot, where the unfortunate hunter and both the dogs were lying dead together."

Many writers have been too hasty in speaking of the irreclaimable nature of this animal. "Tom," the Puma which belonged to the late Edmund Kean, had many amiable qualities, and followed that extraordinary tragedian about like a dog; was often introduced to company in his drawing-room, and kept close to him in the most crowded assembly. Nor is this the only instance


of the docility of this species. Mr. Bennett observes that in captivity the Puma readily becomes tame, and that his manners closely resemble those of the domestic cat. "Like it," he says, "he is extremely fond of being noticed, raises his back and stretches his limbs beneath the hand that caresses him, and expresses his pleasure by the same quiet and complacent purring. They soon become attached to those with whom they are familiar; and numerous instances might be mentioned in which they have been suffered to roam almost at large about the house without any injurious results."



PUMAS.

CHAPTER VI.

THE TIGER.

HE Tiger, closely allied to the lion in size, in power, in external form, in internal structure, in zoological characters, in prowling habits, and in ferocity, is at once distinguished from it, and from every other of their common genus, by the peculiar markings of its coat. "On a ground which exhibits in different individuals various shades of yellow," says Mr. Bennett, "he is elegantly striped by a series of transverse black bands or bars, which occupy the sides of his head, neck, and body, and are continued upon his tail in the form of rings, the last of the series uniformly occupying the extremity of that organ, and giving it a black tip of greater or less extent. The under parts of his body and the inner sides of his legs are almost entirely white; he has no mane, and his whole frame, though less elevated than that of the lion, is of a slenderer and more graceful make. His head is also shorter and more rounded." There is a paler variety almost approaching to whitish, and with the stripes visible only in particular lights. The Chinese Tiger, Lou-chu or Lau-hu, according to Du Halde, varies in colour, some being white, striped with black and gray. The Tiger is a native of India and the Indian

islands. Hindustan may be considered the head quarters of this destructive animal, where he reigns supreme, unawed even by the lion, with which he disputes the mastery, and which is comparatively rare in that peninsula. He is the king of the jungle, and swims well, but does not climb trees like others of the cat tribe. The female brings forth from three to five cubs at a time, and while nursing them is doubly dangerous to man and beast that approaches her lair.

The ferocity of the Tiger is proverbial. He bounds upon his prey with prodigious force, clearing in his deadly leap a distance almost incredible. He strikes down and carries off the buffalo with ease, and man is but a puppet in his fearful grip. When he has once tasted human flesh he seems to prefer it to all other food. In one year, 183 persons were destroyed by Tigers in our Indian dominions. Ten rupees (about twenty-four shillings) were formerly offered by the East India Company for every Tiger destroyed within the provinces over which they had power or influence; a small reward, but sufficient conjointly with the depredations of the animal to encourage the poorer people to destroy as many as possible. The following dreadful particulars which attended the destruction of Mr. Munro, only son of Sir Hector Munro, K.C.B., by a Bengal Tiger, were given by an eye-witness of that distressing event, dated from on board the ship *Shaw Ardasier*, off Saugur Island, December 23rd, 1792:

“To describe the awful, horrid, and lamentable accident I have been an eye-witness of is impossible. Yesterday morning Captain George Downey, Lieu-



tenant Pyefinch, poor Mr. Munro (of the Honorable East India Company's Service), and myself (Captain Consar), went on shore, on Saugur Island, to shoot deer. We saw innumerable tracks of Tigers and deer; but still we were induced to pursue our sport, and did so the whole day. About half-past three we sat down on the edge of the jungle to eat some cold meat, sent to us from the ship, and had just commenced our meal, when Mr. Pyefinch and a black servant told us there was a fine deer within six yards of us. Captain Downey and I immediately jumped up to take our guns; mine was nearest, and I had but just laid hold of it, when I heard a roar like thunder, and saw an immense royal Tiger spring on the unfortunate Munro, who was sitting down; in a moment his head was in the beast's mouth, and he rushed into the jungle with him with as much ease as I could lift a kitten, tearing him through the thickest bushes and trees, everything yielding to his monstrous strength. The agonies of horror, regret, and, I must say, fear (for there were two Tigers), rushed on me at once; the only effort I could make was to fire at him, though the poor youth was still in his mouth. I relied partly on Providence, partly on my own aim, and fired a musket. The Tiger staggered, and seemed agitated, which I took notice of to my companions. Captain Downey then fired two shots, and I one more. We retired from the jungle, and a few minutes after Mr. Munro came up to us, all over blood, and fell. We took him on our backs to the boat, and got every medical assistance for him from the Valentine Indiaman, which lay at anchor near the

island, but in vain. He lived twenty-four hours, in the utmost torture ; his head and skull were all torn and broke to pieces, and he was also wounded by the animal's claws all over his neck and shoulders ; but it was better to take him away, though irrecoverable, than leave him to be mangled and devoured. We have just read the funeral service over his body, and committed it to the deep. Mr. Munro was an amiable and promising youth. I must observe, there was a large fire blazing close to us, composed of ten or a dozen whole trees. I made it myself, on purpose to keep the Tigers off, as I had always heard it would. There were eight or ten of the natives about us ; many shots had been fired at the place ; there was much noise and laughing at the time, but this ferocious animal disregarded all. The human mind cannot form an idea of the scene ; it turned my very soul within me. The beast was about four feet and a half high, and nine long. His head appeared as large as that of an ox, his eyes darting fire, and his roar, when he first seized his prey, will never be out of my recollection. We had scarcely pushed our boat from that cursed shore when the Tigress made her appearance, raging, almost mad, and remained on the sand as long as the distance would allow me to see her."

Various contrivances have been invented to take or kill this destructive animal. Among the inventions formerly in use, and still practised in many parts, the most successful was that of shooting them with a poisoned arrow from a bow, placed so as to be disengaged by the animal passing. The bow is made of

split bamboo, from six to eight feet in length, and at the middle from nine to ten inches in girth. The string is of strong catgut, and often half an inch in circumference. The bow is fixed with great nicety at the middle by two stakes, distant enough to allow the arrow to pass freely without touching, and placed at a distance from the ground, in proportion to the size of the animal to be killed. The string is drawn back and fastened by a wedge, to which a cord is attached, and strained moderately tight to a stake on the opposite side of the path, to be traversed by the animal. The Tiger generally falls within 200 yards of the fatal shot, being frequently struck through the lungs, and often through the heart, and, if less mortally wounded, the poison seldom fails to kill within the hour.

Another plan is to suspend a heavy beam over the way traversed by the Tiger, which falls and crushes him on his disengaging a cord which lets the beam fall. A Persian device is said to consist of a large spherical strong interwoven bamboo cage, or one made of other suitable materials, with intervals throughout three or four inches broad. Under this shelter, which is picketed to the ground in the Tiger's haunt, a man provided with two or three short strong spears takes post by night, with a dog or a goat as his companion, wraps himself in his quilt, and goes to sleep. A Tiger arrives, of whose presence the man is warned by the dog or the goat, and generally after smelling about, rears himself up against the cage, upon which the man stabs him resolutely with his short spear through the interstice of the wicker-work. It seems ludicrous to talk of

which I had refused to allow him to recover, and the elephant being notoriously savage, and further irritated by the goading he had undergone, became consequently unmanageable ; he appeared to see the Tiger as soon as myself, and I had only time to fire one shot when he suddenly rushed with the greatest fury into the thicket, and falling upon his knees, nailed the Tiger with his tusks to the ground. Such was the violence of the shock that my servant, who sat behind, was thrown out, and one of my guns went overboard. The struggles of my elephant to crush his still resisting foe, who had fixed one paw on his eye, were so energetic, that I was obliged to hold on with all my strength to keep myself in the *houdah*. The second barrel too of the gun, which I still retained in my hand, went off in the scuffle, the ball passing close to the *mahout's* ear, whose situation, poor fellow, was anything but enviable. As soon as my elephant was prevailed upon to leave the killing part of the business to the sportsmen, they gave the roughly used Tiger the *coup-de-grâce*. It was a very fine female, with the most beautiful skin I ever saw."

The Tiger is readily tamed when taken young, but its temper cannot be so much depended upon as that of the lion. Keepers enter the cage and caress them, but they never venture upon those annoying liberties which are generally so freely taken with the lion ; and strangers, we believe, have never attempted to venture within their reach. It may also be remarked, that there is only one instance upon record where the Tiger allowed a dog to become an inmate of his den. With

the lion it is frequent, and great affection is displayed. The East Indians, however, appear to have great power in the management of the Tiger, and it is more frequently seen tame in that country than any of the other *Felineæ*. The tame Tigers of the Fakirs, or mendicant priests, exhibit great gentleness and confidence.



HEAD OF YOUNG TIGER.

CHAPTER VII.

THE LEOPARD AND PANTHER—THE CHEETAH—THE
OUNCE—THE JAGUAR—THE OCELOT.

WHETHER the Leopard and the Panther are in reality distinct species, and if so, on what particular characters the specific distinction depends, are questions that have been variously solved by writers of the highest eminence. That there are two species of animals confounded under the names of Leopard and Panther, seems to have been the opinion of most zoologists; and the ancients, who had more extensive opportunities of examining them, though not with a view to their zoological characters, these and other wild animals being chiefly brought for the purpose of fighting with each other or with gladiators, invariably characterised them under two names. "Our own opinion," says Sir William Jardine, "is, that there are at least two distinct species, though it is very difficult to fix upon good characters; that the Leopard is by far the most common, inhabiting both Africa and India; while the Panther is to be found chiefly, if not entirely, in Africa. Both are subject to very great variety, which may be seen in the number of skins which annually arrive in Europe indiscriminately under these titles." Colonel Hamilton Smith,

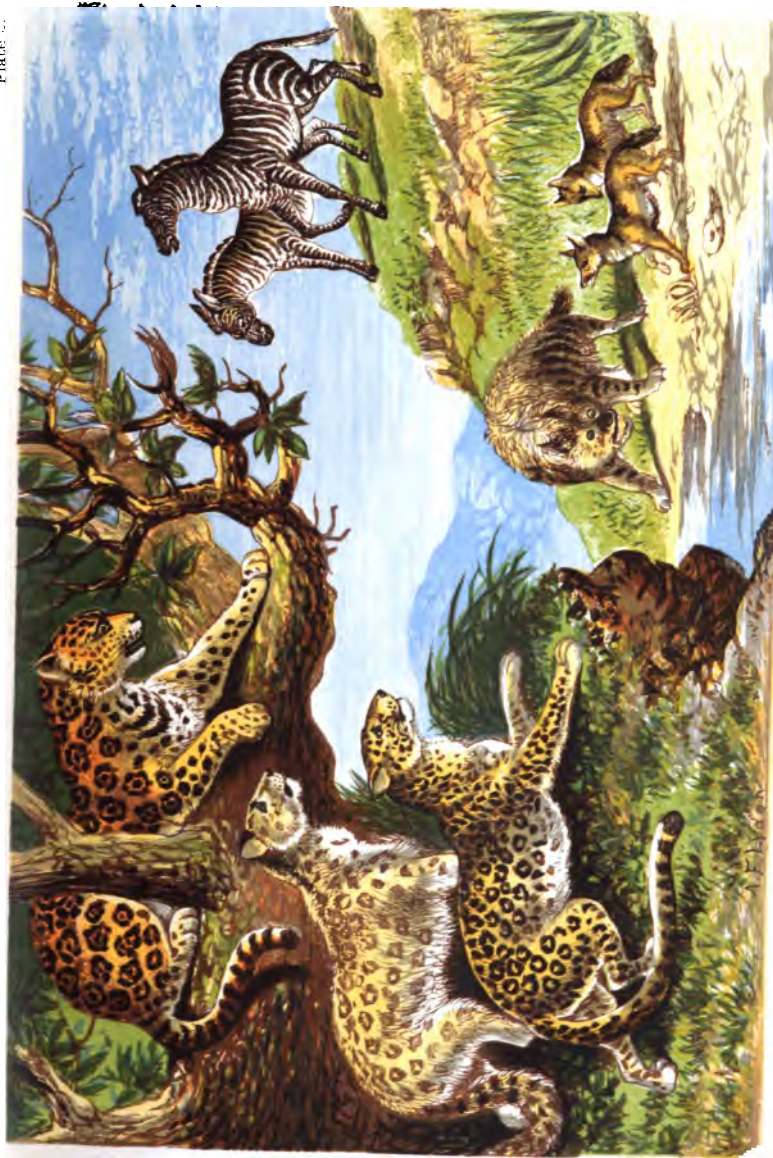
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CHAPTER VII

THE PANTHER—THE LEOPARD—THE LEOPARD—THE PANTHER

THE PANTHER and the LEOPARD are in the same genus, and differ only in what is called their colour. This is the only distinction between them, and it has been very easily solved by the most recent and improved. That there are no other differences between the names of the Panther and the Leopard, who had more experience of examining them, though not of the same kind as the zoologists, these and the same are being brought for the first time with each other or with gladiators, and they are called them under two names. The Panther, says Sir William Jardine, "is, at least, a least two distinct species, though it is very difficult to fix upon good characters: that the Leopard is by far the most common, inhabiting both Africa and India; while the Panther is to be found only, if not entirely, in Africa. Both are subject to great variety, which may be seen in the number of specimens which annually arrive in Europe indiscriminately under these titles." Colonel Hamilton Smith,



Ounce.

Leopard.

Panther.

Hyena.

Jackals.

Zebra.

one of our most eminent naturalists, says:—"The Leopard, when compared with the jaguar and the Panther of naturalists, is uniformly of a pale or yellowish colour, rather smaller, and the dots rose-formed, or consisting of several dots partially united into a circular figure, in some instances, and into a quadrangular, triangular, or other less determinate form, in others; there are also several single isolated black spots, which more especially occur on the outside of the limbs." Mr. Swainson, after copying Colonel Smith's descriptions of the Leopard, proceeds to say:—"Our own opinion of the specific dissimilarity between the Leopard and the Panther, judging from what has been written on the subject, is in perfect unison with that of Colonel Smith; whilst the following remark of that observing naturalist, incidentally inserted in his account of the Panther of antiquity, seems to us almost conclusive:—"The open spots, which mark all the Panthers, have the inner surface of the annuli or rings more fulvous (in other words, darker) than the general colour of the sides; but in the Leopard no such distinction appears, nor is there room, as the small and more congregated dots are too close to admit it.' In truth, if there is any reliance to be placed on the most accurate figures hitherto published, the small spots of the Leopard and the large ones of the Panther must strike even a casual observer, and lead him to believe that the two animals were called by different names."

The Leopard is usually about four feet in length, exclusive of the tail, which is about two feet and a half long. It is of a rich yellowish-fawn colour, paler on

the sides, merging into pure white on the belly, and it is covered with a number of rosettes or even simple spots, but in the size and minor arrangements of the open rosettes there is the greatest variation. Black specimens have also been seen, in which the ground colour is dull black, with spots of a rich glossy black; one of which, brought from Bengal by Warren Hastings, was in the Tower of London in 1793. Some consider this animal to be a distinct species, and describe it under the title of *Felis melas*. According to Péron, the Black Leopard is common in certain parts of Java.

Though less in size than the lion and tiger, they are larger than the lynxes and tiger-cats; they are very formidable, active, and daring; climb trees with the greatest facility; and take their prey by surprise.

Of their manners in a state of nature not much is known. We are, perhaps, best acquainted with them in a state of captivity. They have, in a few instances, bred in this country; but not so frequently as either the lion or tiger. The pair which were in the Tower in 1829, and described by Mr. Bennett, were of very different dispositions; and in this they resembled their congeners, for scarcely two are found which can be equally trusted. The male, notwithstanding very kind treatment, continued sullen and savage, while the female suffered herself to be patted and caressed by the keepers. She possessed a singular propensity, however, "for the destruction of umbrellas, parasols, muffs, hats, and such other articles of dress as may happen to come within her reach, seizing them with the greatest quickness, and tearing them into pieces, almost before the

astonished visitor has become aware of his loss. To so great an extent has she carried this peculiar taste, that Mr. Cops declares he has no doubt that, during her residence in the Tower, she has made prey of at least as many of these articles as there are days in the year." The activity of these animals is also very great, and their motions, when sporting in their cage, are made with extreme grace and elegance. Their meat is generally tossed up in front of the den, at the distance of nearly two feet from the bars, and to the height of six or eight feet from the floor. The animals, who are upon the alert for their dinner, immediately leap towards the bars, and, darting out their paws with incredible swiftness, almost uniformly succeed in seizing it before it falls to the ground. They are more easily tamed than the tiger and lion, and are playful in captivity, but apt to be treacherous. Mrs. Bowditch won the heart of a Leopard by kindness, and by presenting him with lavender water in a card-tray, taught him to keep his claws sheathed. The luxurious animal revelled in the delicious essence, but he was never allowed to have it if he put out his claws.

The CHEETAH, or CHETAH, or HUNTING LEOPARD, is a tall, slender animal with wiry limbs, and claws but slightly retractile, or capable of being drawn back; and is found in Africa and the hotter parts of Asia. The general colour is fawn yellow, variegated with round black spots; a distinct black stripe extends from the inner corner of the eye to the angle of the mouth, and the tip of the nose is black. The eyes are peculiarly large, fine, and expressive, with circular pupils. The

tail is long and curled up at its extremity, which is white. The fur is rather crisp, and on the neck and shoulders is longer than elsewhere, forming a sort of mane. Its length is usually three feet six inches, exclusive of the tail; Temminck gives that of a large specimen as five feet.

"The Hunting Leopard," says Mr. Bennett, "forms a sort of connecting link between two groups of animals, otherwise completely separated, and exhibiting scarcely any other character in common than the carnivorous propensities by which both are, in a greater or less degree, actuated and inspired. Intermediate in size between the Leopard and the hound, he is more slender in his body, more elevated on his legs, and less flattened on the fore part of his head than the former; while he is deficient in the peculiarly graceful and lengthened form, both of head and body, which characterises the latter. His tail is entirely that of a cat; and his limbs, although more elongated than any other species of that group, seem rather fitted for strong muscular exertion than for active and long-continued speed." He is of opinion that the Cheetah more nearly approaches the cats than the dogs, and therefore continues to class it among the *Felinæ*.

In confinement, or when tamed, it shows great mildness and affection; one which Frederick Cuvier, describes, having been so domesticated as to live at large, and in the company of children and domestic animals. In India and Persia it is domesticated and trained to hunt, or rather to surprise, the antelope. Their docility resembles that of the falcon, and their

employment may be aptly compared to the sport of falconry. Their natural instinct teaches them to pursue the game, while the reward of a portion of it, or of the blood, induces them to give up their prey and submit to their master. These animals are so tame and gentle as to be led about in a leash like greyhounds, but when employed in hunting they are carried on an elephant, or on horseback on a pad behind the rider, but more generally on a flat-topped cart, without sides, drawn by two bullocks, and which also carries both the sportsmen and the attendants. Each animal has two attendants, and is loosely bound by a collar and rope to the back of the vehicle, and is also held by the keeper by a strap round the loins. A leathern hood covers the eyes. "On emerging from a cotton field," says a writer, describing the sport, "we came in sight of four antelopes, and my drivers managed to get within a hundred yards of them ere they took alarm. The Cheetah was quickly unhooded and loosed from his bonds, and as soon as he viewed the deer he dropped quietly off the cart, on the *opposite* side to that on which they stood, and approached them at a slow crouching canter, masking himself by every bush and inequality which lay in his way. As soon, however, as they began to show alarm, he quickened his pace, and was in the midst of them in a few bounds. He singled out a doe, and ran it close for about two hundred yards, when he reached it with a blow of his paw rolled it over, and in an instant was sucking the life's-blood from its throat. One of the other Cheetahs was slipped at the same time, but after making four or five desperate

bounds, by which he nearly reached his prey, suddenly gave up the pursuit, and came growling sulkily back to his cart. As soon as the deer is pulled down a keeper runs up, hoods the Cheetah, cuts the victim's throat, and securing some of the blood in a wooden ladle, thrusts it under the Leopard's nose; the antelope is then dragged away, while the Cheetah is rewarded with a leg for his pains."



THE CHEETAH, OR HUNTING LEOPARD.

The OUNCE (*Felis uncia*), until recently, was confounded either with the Leopard or the Panther, but it

"is a distinct species," says Mr. Gray, "easily known by the thickness of its fur, the paleness of its colour, the irregular form of the spots, and especially by the great length and thickness of the tail." It was first noticed by Buffon, who describes it as an animal of considerable size, of a grayish-white, yellowish on the upper parts, and with the hair much more lengthened than in any of the other spotted cats. "Baron Cuvier," says Sir William Jardine, "in his observations on Buffon's plate, does not mention, and seems to overlook, the long and shaggy hair, which we would consider as one of the most marked characters of the species, and one by which a person comparatively unacquainted with the subject, would distinguish it from the Leopard or Panther." It is a lower and more thick-set animal than the Panther; its spots are larger, more irregular, and much fewer, but differing more especially in having the tail decidedly marked with black rings, while those of all the Panthers are spotted. Its length from the nose to the tail is three feet and a half, and the tail is about two feet and a half. It inhabits Barbary and other parts of Africa; Arabia, Persia, and other parts of Asia, as far as China. It is often trained to hunt like the Cheevah, and is said to be more gentle than the common Leopard.

The JAGUAR, or, as he is sometimes called, the American Panther (*Felis onça*, Linnæus), inhabits the warmer parts of South America, chiefly Paraguay and the Brazils, but is, nevertheless, found from the most southern extremity to the isthmus of Darien. It is one of the strongest and most powerful of the *Felinæ* after

the tiger, and its thick and compact limbs and form, independent of the difference in marking, at once distinguish it from the spotted or ringed cats of the old world. It is larger and more robust and stoutly made than the Leopard. The head is larger and rather shorter, and the tail shorter. A bold streak or two of black extends across the chest from shoulder to shoulder. The rosettes on the body are very large, open, and somewhat angular, with a central spot or two of black in each, and a chain of black dashes extends along the spine. When full grown the animal measures from four to five feet from the nose to the root of the tail. There is a black variety of the Jaguar (*Felis nigra*) with the black spots scarcely distinguishable on its deep-brown skin. It is the largest and most bloodthirsty variety.

The Jaguar inhabits the forests, and seeks its prey by watching, or by openly seizing cattle or horses in the enclosures. It actively pursues smaller animals; and even the monkeys, with all their agility, are not exempted from its attacks. It climbs freely and expertly, and Sonnini tells us that "he has seen the prints left by the claws of the Jaguar on the smooth bark of a tree forty or fifty feet in height, and without branches; and although several slips could be traced, it had at last succeeded in reaching the very top." "Sometimes, after a long silence," says Humboldt, "the cry of the Jaguar comes from the tops of the trees; and in this case it was followed by the sharp and long whistling of the monkeys, which appeared to flee from the danger that threatened them." But

horses, oxen, and sheep are his favourite prey, and the depredations committed are sometimes very extensive. Nor is it to be wondered at that the inroads of these creatures are looked upon with horror, when one is possessed of sufficient strength to carry off a horse; and their numbers are so prodigious that 4000 were killed annually in the Spanish colonies, and 2000 were exported every year from Buenos Ayres alone.

Great havoc is committed among the herds of horses in the pampas of Paraguay, and the swiftness of the courser is unavailing before one of these relentless foes. Fear seems to paralyse his efforts, a spring brings the formidable assailant upon his back, and he is either brought to the ground by the weight, or the neck is broken by a blow or twist on the muzzle. A full-grown Jaguar is quite able to drag off a horse. D'Azara caused the body of a horse which had newly fallen a victim to this animal to be drawn within musket shot of a tree in which he intended to pass the night, anticipating that the Jaguar would return in the course of it to its victim; but while he was gone to prepare for the adventure, the animal returned from the opposite side of a large and deep river, and having seized the horse with its teeth, drew it for about sixty paces to the water, swam across with its prey, and then drew it into a neighbouring wood, in sight the whole time of a person whom D'Azara had left concealed to observe what might happen before his return. Their prey, however, is very various. They take the water very freely, and are said even to fish in the shallows, seizing the fish with their paws. They are also very partial to

turtles, of which they devour large numbers. Humboldt says, "We were shown large shells of turtles emptied by the Jaguars. These animals follow the *arraus* towards the beaches, when the laying of eggs is to take place. They surprise them on the sand; and in order to devour them at their ease, turn them in such a manner that the under shell is uppermost. In this situation the turtles cannot rise; and as the Jaguar turns many more than he can eat in one night, the Indians often avail themselves of his cunning and malignant avidity. When we reflect on the difficulty that the naturalist finds in getting out the body without separating the upper and under shells, we cannot enough admire the suppleness of the tiger's paw, which empties the double armour of the *arraus*, as if the adhering parts of the muscles had been cut by means of a surgical instrument. The Jaguar pursues the turtle quite into the water, when not very deep. It even digs up the eggs; and, together with the crocodile, the herons, and the gallinago vulture, is the most cruel enemy of the little turtles recently hatched." He seldom attacks man, but when hard pressed makes a resolute defence.

The OCELOT (*Felis pardalis*, Linnæus), another South American animal, is a very beautiful and graceful little species of the *Felinæ*, easily tamed, and becomes very playful, good tempered, and familiar. Like the jaguar, it is subject to considerable variety in the form and distribution of the markings; but the colouring is always chaste and beautiful, and the rich reddish or tawny of the ground tint blends finely with the deep

brown, almost black, on the borders of the spots. The length of a full-grown Ocelot is from three feet and a half to four feet, including the tail, which is from eleven to fifteen inches, and its height eighteen inches. It inhabits the forests, and climbs trees expertly in search of prey, which consists of birds and small animals.



THE OCELOT.

CHAPTER VIII.

THE HYÆNA—THE PROTELES—THE JACKAL—THE
ZEBRA—THE QUAGGA.

THE HYÆNA is distinguished by having the fore legs longer than the hind legs ; by a rough tongue, great and conical molar, or rather cutting-and-crushing teeth, projecting eyes, large ears, and a deep and glandular pouch beneath the tail. They are ferocious, cowardly, nocturnal animals, and in some countries, where they swarm in legions, are the dread of whole districts, in which, however, they to some extent repay the injuries they commit by their services as scavengers. They seldom attack men, unless forced in self defence, but often carry away children, and destroy sheep, asses, calves, and even cows. During the day they conceal themselves in caverns, amidst ruins, and in other obscure retreats. They are skulking, prowling, and, poetically speaking, mysterious beasts. Their wild howlings during the hours of darkness are well calculated to appal even man ; and the timid beasts upon which they habitually prey crouch panic-struck or take to flight.

They are about two feet four inches in height at the shoulder, and four feet four inches from the nose to the root of the tail. Their hinder quarters seem to be

comparatively feeble, and they run along with a sort of shuffling gait; but the strength of their neck and jaws is prodigious. Dr. Buckland gives the following account of the feats of a Cape Hyæna which he saw at Oxford in the travelling collection of Mr. Wombwell:—“I was enabled,” he says, “to observe the animal’s mode of proceeding in the destruction of bones. The shin-bone of an ox being presented to this Hyæna, he began to bite off with his molar teeth large fragments from its upper extremity, and swallowed them whole as fast as they were broken off. On his reaching the medullary cavity the bone split into angular fragments, many of which he caught up greedily, and swallowed entire. He went on cracking it till he had extracted all the marrow, licking out the lowest portion of it with his tongue; this done, he left untouched the lower condyle, which contains no marrow, and is very hard. I gave the animal successively three shin-bones of a sheep; he snapped them asunder in a moment, dividing each in two parts only, which he swallowed entire, without the smallest mastication. On the keeper putting a spar of wood two inches in diameter into his den, he cracked it in pieces as if it had been touchwood, and in a minute the whole was reduced to a mass of splinters. The power of his jaws far exceeded any animal force of the kind I ever saw exerted, and reminded me of nothing so much as a miner’s crushing mill, or the scissors with which they cut off bars of iron and copper in the metal foundries.” The strength of these animals and their power of dragging away large bodies is strikingly exemplified in Colonel Denham’s

narrative. At Kouka he relates that the Hyænas, which were everywhere in legions, grew so extremely ravenous that a good large village, where he sometimes procured a draught of sour milk on his duck-shooting excursions, had been attacked the night before his last visit, the town absolutely carried by storm, notwithstanding defences nearly six feet high of branches of the prickly tulloh, and two donkeys, whose flesh these animals are, according to our author, particularly fond of, carried off, in spite of the efforts of the people. "We constantly," continues Colonel Denham, "heard them close to the walls of our own town at nights, and on a gate being left partly open, they would enter and carry off any unfortunate animal that they could find in the streets." From the same narrative it appears that it was necessary to protect the graves from the attacks of these rapacious brutes, which would otherwise greedily devour their putrid contents, and a pile of thorns and branches of the prickly tulloh, several feet high, were raised over the grave of Mr. Toole, to protect it from the flocks of Hyænas which nightly infested the burying places in that country.

The Hyænas are confined to Asia and Africa, at least in the present day, and the following species are known:—1. The striped Hyæna (*Hyæna striata*, Zimmerman), the colour of which is variable, but generally gray, irregularly barred with brown or blackish-brown. A mane extends along the spine from the back of the head, which mane is bristled up when the animal is roused to anger. 2. The spotted Hyæna (*Hyæna crocuta*, Erxleben), generally of a gray or grayish-brown colour,

irregularly spotted with black. This is found in Southern Africa, and is the tiger-wolf of the Cape colonists. Mr. Steedman gives most appalling accounts of the rapacity of the spotted Hyæna. He states that Mr. Shepstone, in a letter from Mamboland, relates that the nightly attacks of the wolves, as the Hyænas are generally called, have been very destructive amongst the children and youth; for within a few months not fewer than forty instances came to his knowledge wherein that beast had made a most dreadful havoc.

3. The villose Hyæna (*Hyæna villosa*, Smith) is of a dark brownish-gray, with blackish stripes on the limbs, and inhabits South Africa. This is the straand wolf of the Cape colonists, so called from its frequenting the sea coasts. The straand wolf devours carrion and such dead animal substances, whales, for instance, as the sea casts up; but when pressed by hunger its habits seem to resemble those of the other species, for it then commits serious depredations on the flocks and herds of the colonists, who hold its incursions in great dread.

It has been the custom, among other fabulous assertions, to state that the Hyæna is not to be tamed; now, as Mr. Bennett observes, there is scarcely any animal that submits with greater facility to the control of man. He speaks of the docility and attachment to his keepers manifested by the striped Hyæna, especially when allowed a certain degree of liberty, which the animal shows no disposition to abuse, though those which are carried about from fair to fair in close caravans are surly and dangerous from irritation and ill treatment. Other travellers speak of the Hyæna being susceptible of

domestication, and performing the duties of watch-dogs. And notwithstanding the ferocity of the spotted Hyæna, it is stated that it has been domiciliated in the houses of the peasantry, "among whom," says Mr. Bennett, "he is preferred to the dog himself for attachment to his master, for general sagacity, and even, it is said, for his qualifications for the chase."

The AARD-WOLF, or EARTH-WOLF (*Proteles cristata*), of the Dutch colonists of the Cape, is the only known



THE AARD-WOLF, OR PROTELES.

species of the genus *Proteles*, which appears to be an intermediate link between the hyænas and the civets. It is a native of South Africa, and in general form and

appearance greatly resembles the hyæna, particularly in the length of its fore legs, excepting that it is very much smaller than any of those animals; so that at first sight the animal might be taken for a young striped hyæna, particularly as it closely resembles that animal in the colours and markings of its fur. This truly singular animal unites the head and feet of a fox and the intestines of a civet, and further resembles the fox in its pointed muzzle. The length of an adult female specimen was two feet and a half, exclusive of the tail, which measured eleven inches. The male is somewhat larger. Notwithstanding the disproportionate length of its fore legs, it is said to run very fast. It is very wary and cautious, and feeds on carrion and small animals, not excluding ants. In its habits it resembles the fox. It constructs a subterraneous burrow, at the bottom of which it lies concealed during the daytime, only venturing abroad during the night. It is partially gregarious, several individuals living in the same burrow, which has usually three or four distinct entrances for facilitating escape in case of danger.

JACKAL (*Canis aureus*, Linnæus) is the name of a section of *Carnivora*, placed by most naturalists within the pale of the genus *Canis* or dog, and of which the common Jackal is the best known example. They inhabit India and other parts of Asia and Africa. From the sameness of their characteristics it is difficult to divide them into species, although, from the immense range of country and the variety of climate they inhabit, it is probable that there are several. The Jackal seldom exceeds fifteen inches in height at the shoulder.

The form of the head is narrow, terminating in a very pointed muzzle; the eyes small, with round pupils; the ears rather large; the whiskers long; the tale shorter than that of foxes, but nearly as well furnished with hair; their make is light and active; their colour yellowish-gray above and whitish below, with yellow legs and thighs, and ruddy ears; the head of nearly the same mixed shade as the upper surface of the body, and the tip of the tail invariably dark. The other parts sometimes vary in colour.

They never go abroad voluntarily before dusk, and then hunt for prey during the whole night, roaming through the streets of towns to seek for offals; robbing the hen-roosts; entering outhouses; examining doors and windows; feasting upon all dressed vegetables and ill-secured provisions; devouring all the carrion they find exposed, and digging their way into sepulchres that are not carefully protected against their activity and voraciousness; and, in the fruit season, in common with foxes, seeking the vineyards and fattening upon grapes. They congregate in great numbers, sometimes as many as two hundred being found together; and they howl so incessantly, that the annoyance of their voices is the theme of numerous fables and tales in the literature of Asia. Their cry is a melancholy sound, beginning the instant the sun sets, and never ceasing till after it has risen. The voice is uttered and responded to, by all within hearing, in a concert of every possible tone, from a short hungry yelp to a prolonged crescendo cry, rising octave above octave in the shrillness, and mingled with dismal whinings as of a human

being in distress. During the day Jackals retire to woody jungles and rocky situations, or skulk about solitary gardens, hide themselves in ruins, or burrow in large communities. If by chance one of the troop be attacked, all are on the watch, and, if practicable with self-preservation, issue forth to the rescue. In the Moslem dominions they remain entirely unmolested; but in British India they are occasionally coursed with greyhounds, or hunted with fox-hounds, and, leaving a strong scent, are readily run down, unless they can regain their burrows or mislead them in the jungles. Nevertheless, when at bay, the Jackal fights so desperately, and his snap is so severe, that it is usual to have them destroyed by terriers. They unite the cunning of foxes, and the energy and tact of the best trained dogs, with a tenacity of purpose surpassing both. When overpowered by superior force, and resistance is vain, they affect to be slain, and lie feigning death; but if they be thrown into water while in this state, they swim away immediately.

The story of the Jackal being the lion's provider may have arisen from the notion that the yell of the pack gives notice to the lion that prey is on foot, or from the Jackals being seen to feed on the remnants of the lion's quarry; and although there is an instinctive impulse in these animals to follow the lion and tiger, uttering a peculiar cry, which many other Mammalia may understand, it is evident that a Jackal would be always ready to feast on the leavings of the royal beast, which with the aid of his fine scent he can always escape.

Although when in captivity they know and will

follow their master, they are far from tractable, or to be depended upon. They emit a very offensive smell, not totally obliterated even in a domestic state, when they have been fed for a considerable period on rice, plantains, and other vegetables, as is usually the practice with the native Indians.

THE HIPPOGRINE GROUP, OR ZEBRAS, combine some of the characteristics of the horse with others of the ass. They are all partially or entirely marked with symmetrical stripes of black and white, or with fulvous intermediate passing downwards across the body and neck; all have the limbs white, with callosities on the inner surface of the upper arm; they have sonorous but varied voices. They see remarkably well both by day and by night, surpass the horses of the northern hemisphere in natural courage, are their equals in speed, and the species that are least adorned with stripes appear above the rest, and, next to true horses, formed for the use of men. They can all be tamed and ridden; their vicious disposition, though an impediment, being placable under judicious treatment; and there is little doubt that, in a few generations of domestication, most, if not all, might be rendered serviceable, particularly in South Africa, where they find their coarse but natural food, and are exempt from the distempers which are there often so fatal to our present breeds. They are gregarious, but do not keep together in such numbers as the horses and asses of the northern hemisphere; nor does it appear that they are under the guidance of a stallion leader, who exercises authority, and exposes himself in defence of the herd. Some

prefer mountain localities, others the upland plains, and each species seems to affect the more exclusive society of some particular ruminants. The species amount at least to three, with others not as yet sufficiently examined to be permanently admitted.

THE ZEBRA (*Asinus zebra*) is of a white ground colour, having the head, body, and legs to the hoofs black banded; the belly and insides of the thighs not banded, the tail end blackish; and the nose reddish. The hoofs are narrow, and deeply concave beneath. It inhabits the mountain districts of Africa from Abyssinia to the south, where it often falls a prey to the lion. Although vicious and fierce, the animal may be tamed, as was fully proved by the female that was long kept in the menagerie of Paris, which was exceedingly gentle, and could be ridden with safety.

THE QUAGGA (*Asinus quagga*) inhabits the open plains of Southern Africa, where it also often falls a prey to the lion. This species, equal or superior in size to the zebra, is still more robust in structure, with more girth, wider across the hips, more like a true horse, the hoofs considerably broader than in the zebra, and the neck full, the ears rather small, twice barred with black, the head somewhat heavy, and the muzzle black; the head, neck, and body are reddish-brown; the mane, edges of the dorsal or back streak, and the tail, as well as the colour of the under parts and limbs white, like the dauw; the head and neck banded likewise in the same manner, but on the shoulder the bars become pale, and on the side gradually indistinct, till they are totally lost on the croup, and there are no in-

intermediate brown bands. The hoofs are flattish beneath. The name of this species is derived from its voice, which is a kind of cry somewhat resembling the sounds *qua-cha*! It is unquestionably best calculated for domestication, both as regards strength and docility. Mr. Sheriff Parkins used to drive a pair of them in his phaeton about London, and Colonel Hamilton Smith states that he has "been drawn by one in a gig, the animal showing as much temper and delicacy of mouth as any domestic horse." The Quagga is reputed to be the boldest of all equine animals, attacking the hyæna and wild dog without hesitation, and is, therefore, not unfrequently domesticated by the Dutch boors for the purpose of protecting their horses at night while both are turned out to grass.





CHAPTER IX.

RUMINATING ANIMALS—THE CAMEL—THE DROMEDARY— THE LLAMA—THE GUANACO—THE GIRAFFE.

THE animals which we shall describe in this chapter belong to the order of *Ruminantia*, or those animals which “chew the cud,” and are so named from the faculty which the greater part of them possess of bringing back from the stomach the food which they have hastily swallowed, and again masticating it, a property which, while it seems to impart a pleasing sensation, will render essential service in assisting the digestion of the various vegetable substances, after they have undergone a preparation by the heat and juices of the stomach. This peculiarity constitutes them one of the most natural orders of the *Mammalia*, and is essential to their existence, because their food being composed entirely of substances which yield little nourishment, compared with the bulk of material, it was required that as much nutriment as possible should be extracted from it; and, for this purpose, they have an internal structure with various compartments, performing each their office in preparing and extracting the vegetable juices from the leaves, or blades, or the stalks and woody parts of the plants. Their stomach is divided into four cavities, of which the first or largest is

named the paunch; the second small, and having its inner or mucous coat raised into numerous folds, forming polygonal cells, is called the honeycomb; the third, smaller than the second, is named manyplies, on account of the prominent longitudinal plaits of its inner coat; and the fourth, larger and more elongated than the latter two, is the rennet or true stomach, in which milk is coagulated, and the food reduced to a pulp. The paunch, manyplies, and honeycomb communicate directly with the œsophagus, from which to the manyplies the passage is a kind of canal passing over the honeycomb. When a mass of coarse food is swallowed, it obliterates this canal, and passes directly into the first stomach or paunch; but when a fluid or well masticated food passes down the gullet, it glides along the canal into the third cavity or manyplies, whence it afterwards proceeds into the fourth stomach. The food of these animals, hastily cropped, and imperfectly masticated, passes at first into the paunch and honeycomb, from which, when the animal ceases grazing, it is regurgitated in pellets into the mouth, and being there properly ground and well mixed with saliva, passes directly into the manyplies and true stomach.

In these animals a very beautiful process also takes place in the young, where the milk, then their only sustenance, requires no process of rumination. When the young calf is fed on milk, that liquor, which does not require to be ruminated, is conveyed directly from the œsophagus to the fourth cavity, not passing into the first or second, nor between the plicæ of the third, which at that time adhere together.

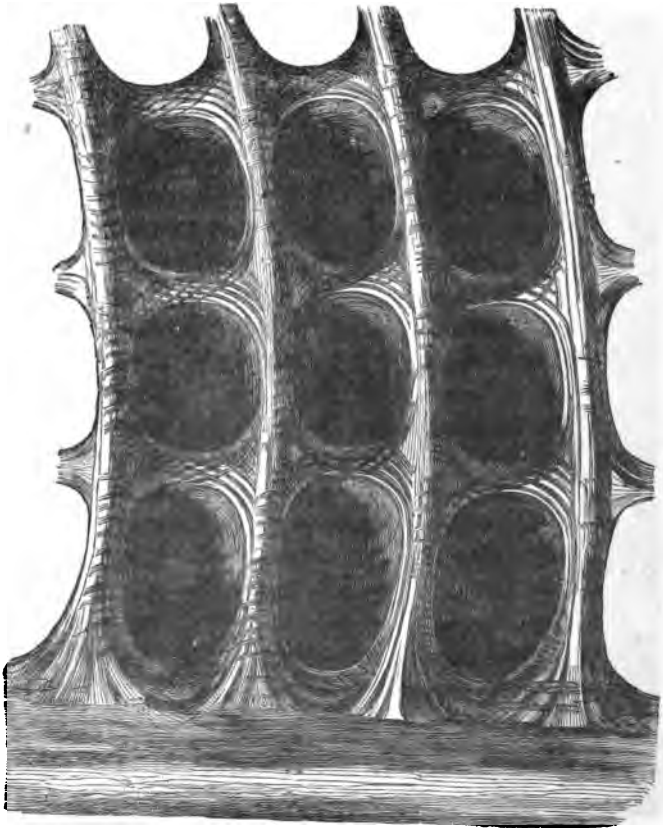
The families into which this order may be divided are those composed of the camels, which are destitute of horns, and are furnished with incisors, as the cutting fore teeth in the upper jaw are termed; the giraffes, which have horns permanently covered with skin; the bulls, buffaloes, sheep, goats, and antelopes, which have true horns, moulded upon a bony core; the deer, which are furnished with bony horns or antlers, annually renewed; and the musk-deer, which are destitute of horns and upper canine teeth, and furnished with long incisors in the upper jaw. Of these groups there are in Great Britain representatives of only that composed of the deer, and of them only two species, the red deer and the roe.

The flesh of the *Ruminantia* is superior to that of the other tribes as food, and their milk is more abundant and nutritious. Their skins form the best kinds of leather; their horns, hoofs, and hair or wool are applied to many purposes in the arts; and they are to man the most important, in an economical point of view, of all the tribes of the *Mammalia*.

Arabia, with its deserts, is the country most constantly associated with the Camel, but at the present day it is used most extensively in North and Western Africa, in Syria and Persia, Chinese Tartary, and in some parts of India; in the former countries being the only beast used for burden, and by its powers rendering the most barren districts in the world habitable, and keeping up an intercourse across a barrier which, without it, would have remained impassable.

Camels have a peculiar development for the reception

and retention of water during long abstinence. "The paunch," observes Mr. Martin, "is divided into two



CELLS OF THE CAMEL'S STOMACH.

portions by a longitudinal ridge of muscular fibres; in

the left is a series of deep cells capable of containing (in the Arabian Camel) four or five quarts of water; in the right is a smaller series holding about a quart. When these cells are filled, the fluid is kept free from mixture with the food by the contraction of the orifice of each cell, and it can be forced out at pleasure by the action of a muscular expansion covering the bottom of this cellular apparatus. The deep cells of the *reticulum* are arranged in twelve rows, and are formed by muscular bands intersecting each other transversely. This compartment in the Camel appears to be destined exclusively as a reservoir for water, never receiving solid food, as in the ox or sheep." Sir Everard Home observes, "It would appear that Camels, when accustomed to journeys in which they are kept for an unusual number of days without water, acquire the power of dilating the cells, so as to make them contain a more than ordinary supply for their journey."

The whole organisation of the Camel proves its adaptation for the arid deserts over which it is destined to



THE CAMEL'S FOOT.

travel. The pads, or sole-cushions of the spreading feet, divided into two toes without being externally separated, which buoy up, as it were, the whole bulk with their expansive elasticity from sinking in the sand, on which the animal advances with silent step—the nostrils so formed that the animal can close them at will, so as to exclude the drift sand of the parching simoon—the beetling brow, and long lashes which fringe the upper lid, so as to screen the eyes from the glare of the sun; the cleft prehensile upper lip, and the powerful upper incisor teeth, for dividing the tough prickly shrubs and browsing on the dry stunted herbage of the desert; the hunch, acting as a reservoir of nutriment against a time of long abstinence; and the assemblage of water tanks in the stomach; these are all proofs of Providential care and design in the structure of this wonderful quadruped. The seven callosities on the flexures of the limbs and chest, and the hump on the back, seem, perhaps, to bear more relation to the necessities of the animal, considered as the servant of man. These callosities are the points whereon the animal rests when it kneels down to receive its burden. The lump, which is a fatty secretion, is known to be absorbed into the system when the animal is pinched for food, thus forming a provision against the casualties of a life ordained to be spent in the desert.

The Arabs call it “the ship of the desert,” for it enables them to pass safely over the vast and pathless wastes of Arabia and Northern Africa. These travellers are often many days in the desert without finding a spring of water. If, then, the patient Camel had not

some unseen means of support, it would perish under its heavy load. They are, in fact, the only animals which could perform the journey, and support for sufficient length of time the heat of the burning sands, and the deprivation of sustenance to which they are exposed; and while thus fitted for life and labour in countries of this description, they are of necessity, from organisation, prevented from living in those which possess much humidity of climate; moisture producing inflammation of the feet and legs, and becoming as insupportable to the Camel as the seas of scorching sands would be to the horse or ox. The average pace of a heavily laden Camel is about two and a half miles an hour. The distance from Aleppo to Bussora, across the Great Desert (about 720 British miles), was traversed by Mr. Carmichael in 322 travelling hours, and by Mr. Hunter in 299½. In travelling with a caravan the acute sense of smelling possessed by the Camel is strikingly displayed. When apparently completely worn out, and when all have been on the point of perishing with thirst, he has been known to break his halter and run with unerring certainty to a spring which had escaped the observation of the other quadrupeds of the caravan, and of man himself.

The Arabs are dependent on this animal for every necessary; like the reindeer to the Laplander, it affords them food and raiment, and a carriage for their burdens. The milk in its various forms nourishes their families; slippers and harness are made of its skin, and tents and clothing of its hair; and in those perilous journeys where even the merchandise and profits are thought

insignificant compared with life, the Camel is often sacrificed for the sake of his supply of water to cool the feverish frame of his master. No wonder, then, that the wealth of these nations is centred in their herds of Camels; and a man's riches are complete "when the number of his Camels is not known."

There are two species of Camels, the Bactrian and the Arabian. The Bactrian Camel (*Camelus Bactrianus*, Linnæus), commonly called the Camel, is distinguished by having two humps on its back. It is about ten feet long; is generally of a dark brown colour, with shaggy hair, particularly under the throat; and is spread through Central Asia to China. Its manners resemble those of the Arabian, and its utility is as great, but it is stouter, more muscular, and stronger in proportion.

The Arabian Camel or Dromedary (*Camelus dromedarius*, Linnæus) is distinguished from the preceding animal by having only a single hump placed nearly on the centre of the back, and is of a size and stature somewhat smaller, being from five to seven feet in height at the shoulders, and about eight feet long. The muzzle is less swollen than in the others, and the hair is soft, woolly, and very unequal, longest on the neck, the throat, and the hump. The colour is always lighter than that of the Camel, being, while young, of a dull or dirty white, becoming with age of a reddish grey. In the internal structure it does not differ materially from the Camel. It is by far the most extensively used, and seems, from its constitution, to be able to endure for a greater length of time those fatigues

and deprivations to which it is subjected ; and it is this animal which is of such vast utility in the east, forming the fortune of the Arab. This species is spread through Arabia, Egypt, Syria, North Africa, Persia, India, &c., and its history is interwoven with that of the patriarchs. We read that Rebecca alighted from her Camel when she met Isaac walking in the field ; and Camels formed part of the present which Jacob gave to his brother Esau. But in the later times of the Jews, asses appear to have been chiefly used for everything in which we should employ horses. There are also fast breeds, and one variety, to which the name of Dromedary properly belongs, with the weight of a man only, can perform very lengthened journeys, and at a very quick pace. Several of these attend the caravans when crossing any of the African deserts, performing the offices of scouts, and keeping a look-out both for danger from the wandering tribes and for the approach to the water stations. These will travel from seventy to one hundred and twenty miles in the twenty-four hours. It is related in 'Morgan's Algiers' "that one of these animals will, in one night, and through a level country, traverse as much ground as any single horse can perform in ten. It was often affirmed to him by the Arabs and Moors, that it makes nothing of holding its rapid pace, which is a most violent hard trot, for four-and-twenty hours upon a stretch, without showing the least sign of weariness or inclination to bait, and that, having then swallowed a ball or two of a sort of paste, made up of barley, and perhaps a little powder of dates among it, with a bowl of water, or Camel's milk, if to be had, and

which the courier seldom forgets to be provided with in skins, as well for the sustenance of himself as of his Pegasus, the indefatigable animal will seem as fresh as at first setting out, and ready to continue running at the same scarcely credible rate for as many hours longer, and so on from one extremity of the African desert to the other."

Camels are carefully trained when young, and taught, to kneel and receive their burdens, and are generally of a mild and submissive disposition, docile and patient, but obstinate when overloaded—often refusing to rise if their burden is felt to be beyond their strength. The strong Dromedary for burden will carry twelve hundred pounds weight for a journey with the caravans across the deserts, and this at the rate of from fifteen to twenty-five miles in the twenty-four hours; and, in cases of extremity, fifty miles of the desert have been traversed by the Arab in the same period of time.

Camels can be trained to obey orders like the discipline of a troop of horse. In the continuation of 'Clapperton's Journal,' by Lander, we are told of the arrival of five hundred Camels laden with salt from the border of the great forest:—"They were preceded by a party of twenty Tauriac merchants, whose appearance was grand and imposing. They entered at full trot, riding on handsome Camels, some of them red and white, and others black and white. All the party were dressed exactly alike. They wore black cotton robes and trowsers, and white caps with black turbans, which hid every part of the face except the nose and eyes. In their right hands they held a long

and light polished spear, whilst the left was occupied in holding their shields and retaining the reins of their camels. Their shields were made of white leather, with a piece of silver in the centre. As they passed me, their spears glittering in the sun, and their whole bearing bold and warlike, they had a novel and singular effect, which delighted me. They stopped suddenly before the residence of the chief, and all of them exclaiming 'Choir,' each of the camels dropped on its knees, as if by instinct, whilst the riders dismounted to pay their respects."

A remarkable fact in the history of the Camels of the Old World is, that they are not at present found in a naturally wild state, and they thus form the only known instance of an entire race of animals living and being continued only under the care and protection of man: for although it has been said by the natives of eastern countries that in some districts these animals are still found completely at large, the information is not of so authentic a character as to warrant our now asserting it. The Arabian Camel was introduced by the Moors into Spain, but the breed has been allowed to become extinct. In Europe, Pisa seems to be the only locality where the Camel is now bred. At San Rossoro the arid plains and stunted bushes bear some distant resemblance to the Asiatic and African desert; but most authors who understand the subject agree that the race is fast degenerating. The date of their introduction into Tuscany is not accurately known, but was probably about the middle of the seventeenth century.

The Camel is frequently introduced in Oriental literature; and we here give the story of "The Dervis and the Lost Camel," alluded to in our introduction as an excellent illustration of the power and value of observation:

A dervis was journeying alone in the desert, when two merchants suddenly met him. "You have lost a Camel," said he to the merchants. "Indeed, we have," they replied. "Was he not blind in his right eye, and lame in his left leg?" said the dervis. "He was," replied the merchants. "Had he lost a front tooth?" said the dervis. "He had," rejoined the merchants. "And was he not loaded with honey on one side and wheat on the other?" "Most certainly he was," they replied; "and as you have seen him so lately, and marked him so particularly, you can, in all probability, conduct us to him." "My friends," said the dervis, "I have never seen your Camel, nor ever heard of him, but from yourselves."—"A pretty story, truly!" said the merchants; "but where are the jewels which formed a part of his cargo?" "I have neither seen your Camel nor your jewels," repeated the dervis. On this they seized his person, and forthwith hurried him before the cadi, where, on the strictest search, nothing could be found upon him, nor could any evidence whatever be adduced to convict him, either of falsehood or of theft. They were then about to proceed against him as a sorcerer, when the dervis, with great calmness, thus addressed the court:—"I have been much amused with your surprise, and own that there has been some ground for your suspicions;

but I have lived long and alone, and I can find ample scope for observation, even in a desert. I knew that I had crossed the track of a Camel that had strayed from its owner, because I saw no mark of any human footsteps on the same route; I knew that the animal was blind in one eye, because it had cropped the herbage only on one side of its path; and I perceived that it was lame on one leg, from the faint impression that particular foot had produced upon the sand; I concluded that the animal had lost one tooth, because wherever it had grazed a small tuft of herbage was left uninjured in the centre of its bite. As to that which formed the burden of the beast, the busy ants informed me that it was corn on the one side, and the clustering flies that it was honey on the other."

The camels of the New World, known under the common name of the LLAMAS, and the scientific name of *Auchenia* of Illiger, differ from the preceding upon several points. They are much smaller, the largest specimen being only about four feet and a half high at the shoulder, and nearly six feet long; and their whole appearance is more deer or goat-like, possessing a proportionally smaller head, long ears, and lively eyes of much brightness. The outline of the back is nearly straight, and without any appearance of the fatty humps. In the feet the difference is very considerable, and evinces admirable design in their construction. The feet of the Camel are broad and extensively cushioned below, being, in fact, precisely adapted to the sands of its congenial desert, whereas the slender, elastic, claw-tipped foot of the Llama is fitted for the crags of the

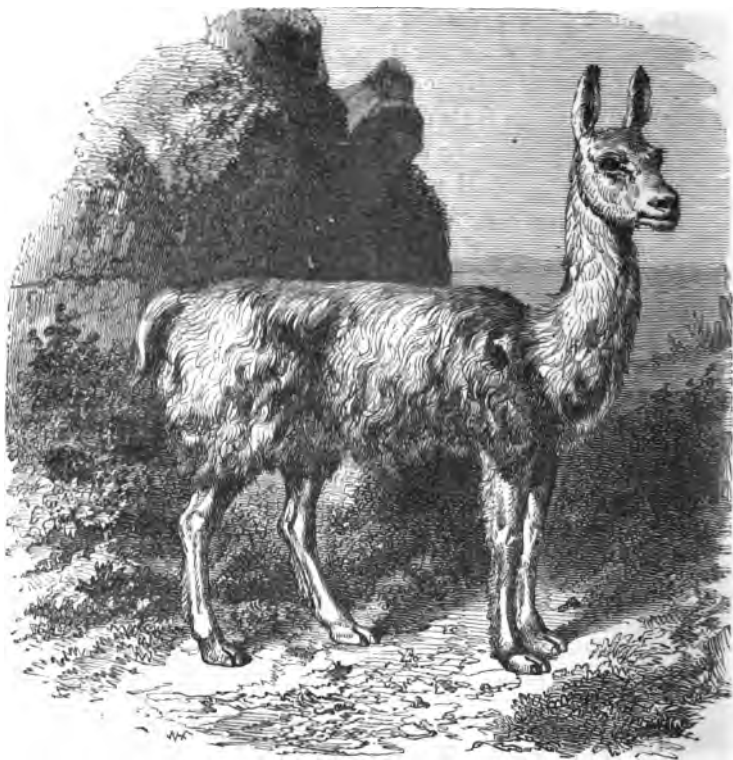
Cordilleras. The foot of the Llama consists of two springy toes, completely divided, each having a rough pad beneath, and at the tip of a strong hoof which is pointed at the extremity, and hooked down somewhat like a claw; the hoof is compressed laterally, and the upper surface presents an acute ridge, while the under surface is linearly concave—a form well fitted for secure footing on the mountain range. The structure of the Camel's stomach has been commonly considered as peculiar to that animal; but Mr. Knox has shown that the Llamas possess a similar apparatus, with the concomitant power of abstaining for a long time from water. From this peculiar structure of the stomach these animals are entitled to rank with the camels. In the smaller divisions of the paunch of the Llama, there are sixteen rows of cells, occupying a surface of from one inch to an inch and a quarter in breadth; and in the greater division there are about an equal number, but much larger and deeper. The cells are hollows, which have openings towards the cavity of the stomach, much narrower than their capacity within. The second stomach is entirely composed of cells, which are deep and extensive, and lie, as it were, imbricated, or like tiles, one partly under another, and in layers; but in none of these cells is there any muscular apparatus to close their mouths and allow the solid food to enter into the truly digesting stomach without going into these cells.

The Llamas inhabit the Cordilleras of the Andes, and are still more frequently found in Peru and Chili, living in herds, and exhibit considerable activity and grace of action. They are easily domesticated, and are still used

as beasts of burden. Their usual weight is about 300 pounds. It is not yet determined how many species of these animals exist, but we know of the brown Llama, which inhabits Peru and Chili, the Vicuña appearing at a much higher elevation, more insensible to cold, and with a thick and longer fleece, and the Guanaco. In the accounts of travellers one animal is often named for another, and the facts of their habits and domestication in their native regions are, therefore, also not always to be depended on. It would appear, however, that the domestic Llama, a stout, strong animal, variable as to colouring, but mostly white, is the descendant of a wild species named the Guanaco, and that the Vicuña, and the Paca, or Paco, are still further distinct. In the tame Guanaco, or Llama (*Auchenia Llama*), the wool is long and coarse; in the wild Guanaco it is much finer and softer, and of a cinnamon brown. In the Vicuña (*Auchenia Vicuña*), a small species inhabiting mountain ranges on the verge of perpetual snow, the wool is exquisitely fine, but short, and of a pale yellow brown. Thousands are annually killed in Peru for this material alone. The Guanaco is gregarious, wild, fleet, active, and inquisitive, and takes readily to the water. Its general colour is rich reddish-brown, the head and part of the neck being gray. The neck is long, the tail a little raised up and curled down, and its height at the top of the shoulders is three feet and a half. In the Paca, or Alpaca, the domestic breed of which is often of an intense lustrous jet black, the wool falls in long flakes glossy and silken, reaching down to the knees.

It was one of these animals which was employed

by the ancient Peruvians at the conquest. They are still used for transporting burdens. They become very docile, are trained to kneel when loading, and



THE GUANACO.

the drove is generally preceded by one old and well trained as a leader ; his head is ornamented with ribbons,

small streamers of cloth, and little bells, and he has rings in his ears; the rest follow regularly after, and the Indian driver in the rear whistles to the cadence of their feet. In this manner they will travel from fifteen to twenty miles daily through the rugged passes of the Andes, with a weight of 150 pounds. But as a beast of burden in its native mountains of Peru and Chili the Llama has given place to the mule. It is still most important as a wool-bearer of a character approximating to silk. Large quantities of this material are imported into England for the manufacture of shawls and other delicate fabrics.

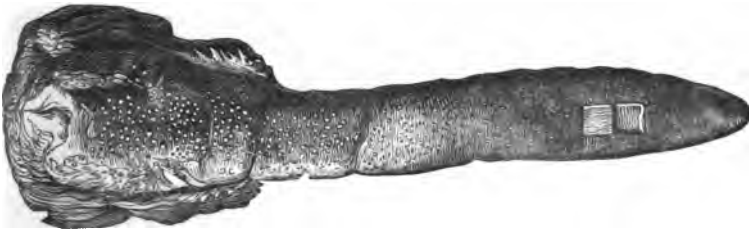
Although the GIRAFFE was known to the ancients, little was known of it a few centuries ago. We are now well acquainted with it from the living specimens which have from time to time been imported into England and France. The Romans gave it the name of *Camelopardalis*, from its similarity to the camel in form, and to the leopard in spots. Pliny, and other ancient writers, briefly noticed it; but Heliodorus, a native of Emessa, in Phœnicia, and bishop of Tricca, in Thessaly, who lived near the end of the fourth century, thus described it in his "*Æthiopica*":—"The ambassador of the people of Abyssinia brought presents to Hydaspes. Among other things was an animal of a strange and wonderful kind, about the size of a camel, marked with florid spots: the hinder parts were low, like those of a lion; the shoulders, front feet, and breast, disproportionably elevated; the neck was small, and lengthened out from the body, like a swan; the head in form resembled a camel's, but was twice as

large as a Lybian ostrich's ; and it rolled its eyes, which had a film over them, in a strange manner." The Camelopard was seen by Denham and Clapperton in parties of five or six on the borders of Lake Tchad, and also met with and described by Ruppel in his "Travels in North Africa;" while those of the south are frequently mentioned in the "Travels" of Le Vaillant and Burchell. Some naturalists consider that there are two species, one peculiar to Nubia, Abyssinia, and the adjacent districts, the other a native of the wide regions of Southern Africa ; but the probability is that they are local varieties.

The Giraffe, measured from the hoof to the top of the head, stands the tallest of all known quadrupeds. Its height is from fifteen to twenty-one feet. The general colour is yellowish-white, patched over with large, square, and irregularly formed spots, of a yellowish-brown, or fawn colour, divided from each other by a narrow stripe of the pale ground colour. The immense length of neck, and the disproportional height of the fore-quarter, compared with the hinder, are the appearances which first strike an observer as unwieldy, clumsy, and unfitted for an active life. The food, however, is derived in a great measure from the foliage of trees, particularly a species of acacia (*Acacia Giraffa*, Burch). Its height enables it to reach the lofty branches, which are uncropped, from being above the reach of ordinary animals ; and, on the other hand, a shorter neck would not have allowed it easily to reach the earth in districts where wood was not plentiful.

The structure of the tongue of the Giraffe is very

remarkable; it is at once an organ of taste, of touch, and of prehension. It is capable of the most extraordinary elongation, and is flexible to the utmost possible degree. It is long, slender, and pointed, and is much used in the acquisition of food, as the animal coils it round the twigs and foliage of trees, which are drawn by its means between the lips. It is very interesting to see with what address the Giraffe uses this organ, and how dexterously he applies it as a hook, or holder; indeed, the power of prehension, and the sense of touch are so developed, that the animal can grasp with the extended tongue an ordinary lump of sugar, and carry it away to the mouth. This organ is very smooth, except when papillæ, or fine teat-like terminations of the nerves, are raised, when it becomes rougher, and slightly adhesive.



TONGUE OF THE GIRAFFE.

The head is adorned with three prolongations of the bone, two of which, in the usual place of horns, are generally described as such. They are covered with a velvety skin similar to those of the deciduous horned deer at their first growth, but which does not fall off,

and at the tip they are surmounted by some strong bristly hairs. In the adult the internal structure is hard and solid, but in the young Geoffroy St. Hilaire observed the appearance of a cellular centre, nourished by vessels. The third protuberance is in the centre of the skull, and appears as a rounded knob, and is of a very spongy texture. The lips are prominent, muscular, extremely flexible, and hair-clad; they aid the tongue in its various offices. Its nostrils are narrow, and it can close them by the aid of muscles which Professor Owen thinks are designed for the purpose of enabling it to keep out the sand during the storms of the deserts. The eyes are full, large, dark, lustrous, and so prominent that, without turning its elevated head the animal can command a survey of the whole horizon, and mark the approach of an enemy from any quarter; hence the difficulty of surprising the Giraffe, and the ability with which, when run down, it defends itself by a rapid succession of accurately delivered kicks. We have never heard these animals utter any noise or cry, nor do travellers make any mention of their voice.

In a state of nature they are timorous, and flee immediately from danger, but in a state of domestication lose much of their timidity, become mild and docile, know their keeper, and take from the hand what is offered to them. "The first run of the Giraffe," says M. Thibaut, "is exceedingly rapid. The swiftest horse, if unaccustomed to the desert, could not come up with it, unless with extreme difficulty. The Arabs accustom their coursers to hunger and to fatigue. Milk generally serves them for food, and gives them power to continue

their exertions during a very long run. If the Giraffe reaches a mountain it passes the heights with rapidity ; it bounds over ravines with incredible power ; horses cannot, in such situations, compete with it. The Giraffe is fond of a wooded country, the leaves of trees being its principal food. Green herbs are also very agreeable to this animal, but its structure does not admit of its



HUNTING THE GIRAFFE.

feeding on them in the same manner as our domestic animals, such as the ox and the horse. It is obliged to straddle widely ; its two fore feet are gradually stretched apart from each other, and, the neck being then bent in



Gorilla.

Quata.

Chimpanzee.

Baboon.
Orang-outang.



Gorilla.

Quata.

Chimpanzee.

Baboon.
Orang-outang.

CHAPTER X.

THE QUADRUMANA—THE CHIMPANZEE—THE ORANG-OUTAN—THE GORILLA.

MONKEY is the name usually applied to those forms among the *Simiadae* family which possess a tail; Ape to those without tails and Baboon to a genus with a tail varying in length, but usually short, and with a head resembling that of a large dog. Though our early writers use these three words indiscriminately as synonymes, and apply them indifferently to the same animal, yet the significations here given have generally prevailed since the time of Ray, and are now almost exclusively adopted. They are all classed in the order *Quadrumana*, from their generally possessing four long and flexible hands, with fingers and thumbs. *Quadrumana* is Cuvier's name for his second order of mammiferous animals, an order which must be always viewed by the zoologist with great interest, inasmuch as it contains those forms among which will be found the nearest approach, though the distance is still great, to man, viz., the Chimpanzee, the Orang-Outan, the Gorilla,. The first order, *Bimana*, includes only one species, man.

These hands are chiefly formed for grasping and

climbing; and as the *Quadrumana* live generally in forests, which not only supply them with food, but afford them shelter from enemies, and from the scorching heat of a tropical sun, the object of their peculiar formation is evident. They are the most expert of climbers, and perform amazing leaps with perfect ease, but they do not hold themselves up, or walk erect, except with difficulty, their foot in such position not resting on the sole, but on its external edge, and the narrow pelvis, or the lower part of the abdomen, not favouring equilibrium in that posture. "Compared with the hands of man," observes Mr. Martin, "those of the *Simiæ* are rude and imperfect instruments. Constructed as tree-climbing organs, they are incapable of the manipulations which the human hand executes with the utmost facility; notwithstanding, they adequately serve the wants of these animals, and harmonize with their general economy. It is, therefore, in accordance with their arboreal habits, that the hinder graspers of the *Simiæ* are as handlike as the anterior, perhaps more so, for in these latter organs the thumb is far more developed, never, indeed, becoming rudimentary, even in those instances in which it is the most reduced in the anterior graspers." "Nevertheless," says Cuvier, "the liberty of their fore arms, and the amplification of their hands, permit among them all many actions and gestures similar to those of man."

India, so horribly celebrated by the sacrifices of its infatuated devotees, is in some districts no less so for its weak and extravagant idolatry of the Ape. In Ahminadab hospitals have been erected for the benefit

of Apes, where thousands are kept in fancied ease and indulgence; and another city, which was taken by General Goddard in 1780, upon its surrender contained forty thousand inhabitants, and as many Monkeys. They are even worshipped by the Brahmins, and are raised to the rank of gods. Gorgeous temples are erected,

“With pious care a monkey to enshrine.”

Mofleus, in his ‘History of India,’ describes one of great magnificence—it was fronted by a portico for receiving victims sacrificed to it, which was supported by no less than seven hundred columns; and Linschotten relates that when the Portuguese plundered one of these monkey palaces, in the island of Ceylon, they found, in a little gold casket, the tooth of an Ape, a relic held by the natives in such veneration, that they offered seven hundred thousand ducats to redeem it. It was, however, burnt by the Viceroy, to stop the progress of idolatry. Among the ancient Egyptians they also seem to have been held in more than ordinary reverence, or at least to have borne a rank equal to that of the sacred ibis. They were, like them, represented in the sculptures, and their bodies were preserved as mummies.

An idea even in comparatively modern times prevailed among men who possessed great learning, and minds at once comprehensive and penetrating, “that men and monkeys belonged to the same species, and were no otherwise distinguished from each other than by circumstances which can be accounted for, by the different physical or moral agencies to which they have been exposed.” But we can only consider them, in the

words of Lawrence, the eminent anatomist, as "equally unacquainted with the structure and functions of men and monkeys, not conversant with zoology and physiology, and, therefore, entirely destitute of the principles on which alone a sound judgment can be formed, concerning the natural capabilities and destiny of animals, as well as the laws according to which certain changes of character, certain departures from the original stock, may take place."

"The brute face," says Lawrence, "is merely an instrument adapted to procure and prepare food, and often a weapon of offence and defence. The human countenance is an organ of expression, an outward index of what passes in the busy world within. In the animal, the elongated and narrow jaws, with their muscles, with their sharp cutting teeth, or strong pointed and formidable fangs, compose the face; the chin, lips, cheeks, eyebrows and forehead are either removed or reduced to a size and form simply necessary for animal purposes. The nose is confounded with the upper jaw and lip, or, if more developed, is still applied to purposes connected with procuring food." In the whole we have the muzzle or snout of an animal, not the countenance of a human being. And, speaking of the differences in the structure of man and the chimpanzee, Professor Owen says:—"These differences result from original formation, and are not liable to be weakened in any material degree, either, on the one hand, by a degradation of the human species, or, on the other hand, by the highest cultivation of which the anthropoid Apes are susceptible. The unity

of the human species I regard as demonstrated by the constancy of those osteological and dental characters to which my attention has been more particularly directed in the investigation of the corresponding character in the higher *Quadrumana*. Man is the sole species of his genus, the sole representative of his order.”

Cunning joined with caution, an inquisitive and prying turn, and imitativeness, are the strong characteristics in the disposition of the whole family. All these faculties and propensities become more developed in a state of confinement, and, consequently, of tuition, than in their natural wildness. This cunning is indispensable for their preservation in their wild state. Their power of imitation is very great, and often ludicrous in the extreme, from the expressive face and human-like form of the upper parts. Their food is almost entirely vegetable. The forest supplies them with nourishment in the endless variety of fruits and nuts, roots and juicy shrubs. Insects are also greedily devoured by all, and as expertly caught. A curious manner of feeding is thus related by Ludolf in his ‘History of Ethiopia’ :—“Of Apes there are infinite flocks up and down in the mountains, a thousand and more together. There they leave no stone unturned. If they meet with one that two or three cannot lift, they call for more aid, and all for the sake of the worms that lie under—a sort of diet which they relish exceedingly. They are very greedy after emmets; so that having found an emmet hill, they presently surround it, and, laying their fore paws with the hollow downwards upon the ant heap, as fast

as the emmets creep into their treacherous palms they lick them off with great comfort to their stomachs, and there they will lie till there is not an emmet left." The stores of the wild bees furnish another repast, and the eggs, and occasionally the young, of birds, is the only approach which can be traced to a carnivorous propensity.

The group of Apes approach in external form, and in some points of anatomical structure, nearer to the human species than do any other animals. The group includes the Chimpanzee, the Orang-Outans, the Gorilla, and the Gibbons, and are arranged by most Naturalists under three genera, viz., *Troglodytes*, *Pithecus*, and *Hyllobates*. They have neither tails nor cheek-pouches. The arms are remarkable for their extreme length, and the lower limbs for their comparative shortness, and their bowed or inward tournure, the knees being turned outward, and the feet articulated at the ankle joint in such a manner that the soles turn obliquely inwards, so as to face each other; they can thus be brought with the utmost readiness to apply themselves to the upright branches or trunks of trees, a firm grasp being thereby ensured. On the ground these animals are awkward and waddling; they tread rather on the outer edge of the sole than on the sole itself; while stooping slightly forwards, they use their long sinewy arms as crutches, and by their aid hobble along, often, indeed, swinging their body forwards, resting its weight on the half-closed fists, placed firmly on the ground. The great length of their arms gives these animals peculiar advantages in their native forests;

they launch themselves from branch to branch with singular address, and climb to the topmost branches or pass from tree to tree with surprising facility. They never walk on two legs except when they have occasion to use the fore hands in carrying something. Nearly or altogether without callosities, they do not repose in the manner of ordinary monkeys, on their hams, but stretch themselves on their sides, like human beings, and support their heads upon their hands, or by some other means supply the want of a pillow.

The Apes in general appear to be more grave and less petulant and mischievous than the ordinary monkey. When young (if we are to judge from those kept in confinement) they are gentle, affectionate, and intelligent; but there is some reason to believe that when adult they become fierce and intractable. The aspect is melancholy; the lips are very flexible, and capable of extraordinary protrusion.

Of all the Ape tribe the CHIMPANZEE (*Troglodytes niger*) is the most adapted for terrestrial habits. The general figure is stout and short; the chest is broad, the shoulders square, the abdomen protuberant; the nose is flat, the nostrils divided by a very thin septum, or membrane; the lips are extremely moveable, and traversed by vertical wrinkles; the ample ears are naked; the eyes lively, deep set, and of a chestnut colour; the neck is short; the arms slender, but muscular; and the hands, when the animal stands erect, reach just below the knee. The fur is coarse, harsh, moderately glossy, long, and of a black colour, more or less mixed with grey on the lower part of the

back, haunches, and thighs; the wrinkled cheeks are thinly furnished with short grey hairs. On the fore arm the direction of the fur is reversed from the wrist to the elbow; the back of the fore hand is naked; the hair of the head radiates from a centre; the skin of the face is dusky black, darker round the eyes; the ears and palms are of a dusky purplish black. In the young Chimpanzee the skull is voluminous in proportion to the face, but as the animal becomes adult the jaws expand, the volume of the face enlarges, and preponderates greatly over that of the cranium. The adult male, when erect, measures about four feet from head to heel, or a few inches more; the female is smaller. Were the lower limbs in proportion to the bulk of the trunk, the height would be more considerable.

In the dense forests of Sierra Leone, Guinea, Congo, Loango, &c., these animals live in large companies, or troops, and are much dreaded by the natives. Lieutenant Matthews states, that "they generally take up their abode near some deserted town or village where the papau tree grows abundantly, of the fruit of which they are very fond, and build huts nearly in the form in which the natives build their houses, which they cover with leaves; but these are only for the females and young to lie in—the males always lie on the outside. If one of them is shot, the rest immediately pursue the destroyer of their friend; and the only means to escape their vengeance is to part with your gun, which they directly seize upon with all the rage imaginable, tear it to pieces, and give over the pursuit." The females are

devotedly attached to their young, and are protected by the adult males with great resolution.

Lieutenant Sayers states that the low shores of the Bullom country, situated on the northern border of the river of Sierra Leone, are infested by Chimpanzees, and he heard their cries in the dense forest. "They are exceedingly watchful, and the first one that discovers the approach of a stranger, utters a protracted cry, like that of a human being in the greatest distress. The first time I heard it I was much startled; the animal was apparently not more than thirty paces distant; but had it been but five, I could not have seen it, from the tangled nature of the jungle; and I certainly conceived that such sounds could only have proceeded from a human being, who hoped to gain assistance by his cries from some terrible and instant death. The native who was with me laid his hand on my shoulder, and, pointing suspiciously, said, 'Massa, Baboo live there!' and in a few minutes the wood appeared alive with them, their cries resembling the barking of dogs. My guide informed me that the first cry heard was to inform the troop of my approach, and that they would all immediately leave the trees, or any exalted situation that might expose them to view, and seek the bush; he also showed evident fear, and entreated me not to proceed any farther in that direction. The plantations of bananas, papaus, and plantains, which the natives usually mix with their rice, constituting a favourite food of the Chimpanzees, accounts for their being so frequent in the neighbourhood of rice-fields. The difficulty of procuring live specimens of this genus,

arises principally, I should say, from the superstitions of the natives concerning them, who believe that they possess the power of 'witching.'"

At different times within the last few years young individuals of this extraordinary species have been brought to England, but none have reached maturity ; they were remarkable for gentleness, docility, confidence, affection, and a very high degree of intelligence, combined with playfulness. A most interesting young male Chimpanzee, which was named "Tommy," arrived



PORTRAIT OF TOMMY.

in this country in September, 1835, and enjoyed the best health and spirits in the Zoological Society's Gardens for some time, but unfortunately died in the

following autumn. Its appearance and manners have been thus described :—

“On entering the room in which the Chimpanzee was kept,” says Mr. Martin, “the first thing that struck the attention of visitors was its aged appearance, and its resemblance to an old, bent, diminutive negro. This appearance of age was much increased by a spare beard of short, white hairs, which was spread over the muzzle, and by the deep wrinkles which furrowed the cheeks. It was not until being informed of its age, which, as proved by its dentition, was in all probability about two years and a half, that a person ignorant of the natural history of the Chimpanzee, would have considered this specimen in the light of an infant; its actions, however, were those of a child capable of running about and amusing itself; lively and playful, yet neither mischievous nor petulant; it was alive to everything which took place about it, and examined every object within reach with an air so considerate and thoughtful, as to create a smile on the face of the gravest spectator.”

Another zoologist thus describes its manners in detail :—“In the Zoological Gardens he occupied a room in the keeper’s apartments, in which a large cage was constructed for his accommodation, and which was kept as nearly as possible in a uniform temperature. Two artificial trees had been erected in the cage, and a rope suspended between them, to afford him an opportunity of amusing himself by climbing or swinging; but unless when commanded by his keeper, to whom he invariably showed a ready and willing obedience, he

generally preferred running about the bottom of the cage, or amusing himself with the visitors. When moving quickly his pace was a kind of brisk canter, and unless when his hands were employed in carrying anything, he invariably walked on all-fours, leaning on the knuckles of the half-closed fist, as observed by Tyson and Dr. Traill. At the same time the entire sole of the hind foot was brought into contact with the ground in the act of progression, and as the arms were not very much longer than the legs, the body was stooped or bent at the shoulders, though the attitude, nevertheless, partook more of the erect than the horizontal. But though, when perfectly free and unrestrained, his most usual mode of progression was on all-fours, Tommy could, nevertheless, adopt the biped pace and station with great ease when occasion required it. His feet, and particularly his heels, were broader, and better adapted for this purpose than those of the Orang-Outan, and in walking upright he was not under the same necessity of stretching out his arms, or moving them to and fro, for the purpose of securing his tottering equilibrium: the soles of his feet, however, were flat, and this circumstance, united to the greater distance and freer movements of his hind legs, gave his gait a waddling motion, similar to that of human beings whose feet are affected with the same deformity.

"In many of his other actions Tommy likewise approximated nearly to the human species. He was, without exception, the only animal we have ever seen that could leap upon his hind feet like man; and this feat he often performed, both on the floor of his cage

and in descending from his tree, or from the bars of his cage, up which he frequently climbed for the purpose of seeing over the heads of the spectators. He frequently indulged, too, in a kind of rude stamping dance, perfectly similar to that of a child three or four years old, only that it was executed with greater force and confidence. All this occurred from the uninterrupted spirits and buoyancy natural to the infant mind; he was at all times cheerful, lively, and perpetually in motion, from sunrise to sunset, either jumping, dancing, or cantering about his cage, romping and playing with the spectators, or amusing himself by looking out at the window.

“He did not often climb up his tree, unless at the command of his keeper; he appeared, indeed, to be upon the whole but an indifferent climber, particularly when compared with the Orang-Outan, and generally preferred the level surface of the ground; whether it was that his tree was not properly constructed, or that he was too heavy and corpulent: but from his manifest awkwardness in performing this action, and his evident preference of the level surface, it is highly probable, as, indeed, most travellers have affirmed, that the progression and habits of the species are more terrestrial than arboreal, and that they ascend trees principally, if not solely, in search of food. When ordered to seat himself in his swing, Tommy did so with great good humour, stretching out his foot to some of the company to set him in motion. We observed that he used the right hand in preference to the left, and had obviously greater power and facility of action with this than with

the opposite member. In the human subject this has generally been attributed to the effects of education ; but in Tommy, at least, it was a natural action, since he was perfectly unsophisticated in this respect ; and it would be a highly interesting inquiry to ascertain whether the same preference may not be exhibited in other Apes, and, consequently, how far it may depend upon some necessary and inherent principle of the animal conformation, rather than upon mere education.

“ All his actions were those of a human infant, and though his powers, both mental and physical, were, comparatively speaking, more developed, he had all the gaiety, playfulness, and curiosity of the child, the same innocence, the same gentleness, the same affection, and the same restless, pettish, and inconstant disposition ; even his natural appetites and tastes were similar ; he had the same natural fondness for sweets, the same propensity to eat at all times and of all substances, and equally preferred milk and tea to spirituous and fermented liquors.

“ In natural shrewdness and sagacity, however, Tommy greatly excelled the human infant, and, indeed, for that matter, many grown individuals. It is more particularly in interpreting your wishes and intentions from your looks, tones, and gestures, that this animal exhibited the most wonderful quickness of apprehension, vastly superior, indeed, to that of ordinary man, and only equalled by what we observe in deaf and dumb people, whose defect of speech is compensated by this unusual acuteness of observation. We have seen Tommy, on one occasion, when commanded by his

keeper to bring him the core of an apple which he had thrown down on the floor of his cage, manifest the greatest anxiety to obey, though much perplexed to discover what it was he was required to do, as he evidently did not comprehend the nature of the order. He moved towards the window, stopped and looked back at the keeper, and then at the company; perceiving by their looks that he was mistaken, he returned, put his hand upon his swing as if to mount, again looked round to see if he was right, and was manifestly much puzzled what to do; at length one of the spectators pointed to the core of the apple; he stretched his hand towards it, looked inquiringly at the keeper, hesitated for a moment till he received the expected nod of approbation, and then lifted and carried it to his attendant without further hesitation."

At Scarborough, in 1855, Mr. Waterton, the eminent author of the 'Wanderings,' had the pleasure of seeing a living specimen in Mrs. Wombwell's menagerie. "Although," he says, "the room seemed small, and very unaccommodating to the climbing animal, still our young Chimpanzee managed to thread its way up and down the surrounding furniture; and on reaching me it climbed up to my neck, where it found a comfortable resting place. When I had approached sufficiently near to the window, so that the Chimpanzee could profit by the movement it would lay hold of the projecting parts, and then pass onwards, looking for a ledge or shelf to help it in its transit. But when we placed it on the floor again, it seemed distressed, the countenance underwent a change, and we could not doubt of its discontent. Miss Blight,

who is governess to this wild little woman of the woods, has given her the name of 'Jenny,' and has observed that her pet is very fond of celery, a piece of which Miss Blight, in our presence, held out to her from the opposite side of the room, first having cleared the room for Jenny to pass over. Bending forward, in the attitude of an old woman who uses two sticks in order to support her tottering frame, Jenny moved slowly, and, to all appearance, painfully, across the floor, with her hands clenched. On seizing the piece of celery, she took a sitting position with remarkable composure, and, her hands being now no longer in restraint, nor in an artificial posture on the floor, she made use of them just as we ourselves would use our hands and arms." Mr. Waterton paid her four long visits; of the last he says:—"Having mounted the steps which led up to the room, in order that I might take my leave of her, Jenny put her arms round my neck; she looked wistfully at me, and then we both exchanged soft kisses, to the evident surprise and amusement of all the lookers-on." Shortly after Jenny died.

THE ORANG-OUTAN OR ORANG-UTAN (*Pithécus Sâtyrus*, Geoffroy) is less like man in many of its characteristics than the Chimpanzee. It inhabits the great islands of the Indian Archipelago, particularly Borneo and Sumatra. Eminent zoologists are of opinion that two species exist in Borneo, and Mr. Low believes there are three. Mr. Wallace thinks that the Sumatra species may be identical with one of these. The principal difference in the two known species consists in large fleshy callosities on the temples and

cheeks of the adult male of one species, which do not appear in the other. These callosities are also wanting in the female and young males. The colour of the hair in both species is reddish-brown, varying in different specimens from a sandy hue to that of dark mahogany. The following is a description of a male specimen from Borneo, in the Paris Museum:—The head is large, the forehead naked and retiring; large fleshy callosities, in the form of elevated ridges, occupy the molar bones, extending from the temples, and giving a singular expression to the physiognomy. The eyes are small, and closely set together; the nose is depressed, the nostrils oblique; the ears are small, and lie closely on the head; the lips are thick and fleshy, the upper part furnished with scanty moustachios; the chin is furnished with a long peaked beard; the hair is very long and thick, falling in masses on the back and shoulders; it is long on the arms and legs, but scanty on the chest, abdomen, inside of the thighs, and back aspect of the upper arm; that of the forearms is reverted to the elbow; the hair of the head is directed forward, from a common centre of radiation between the shoulders; the contour of the body is heavy and thick; the fore feet or arms are so long that the hands touch the heel; the thumb of the hind feet is nailless. The general colour is deep chestnut. The total height is three feet eight inches, and breadth of face across the tuberosities nine inches. Another specimen from Borneo was four feet six inches in height, and still larger specimens are said to have been procured by Dr. Muller in Borneo. It is probable that, as in

the human subject, the stature of the Orang varies. The female is much shorter than the male. The tusks of the full-grown Orang are at least as large as those of the lion, and are most formidable weapons.

The Dutch zoologist, Dr. Muller, who spent many years in exploring the great Indian Islands, and had many excellent opportunities of observing the habits of the Orang in their native haunts in the primeval forests of Borneo, describes them as being in the highest degree unsociable, leading for the most part a perfectly solitary life, never more than two or three being found in company. Their deportment is grave and melancholy, their disposition apathetic, their motions slow and heavy, and their habits so sluggish and lazy that it is only the cravings of appetite or the approach of imminent danger that can rouse them from their habitual lethargy or force them to active exertion. When under the influence of these powerful motives, however, they exhibit a determination of character and display a degree of force and activity which would scarcely be anticipated from their heavy, apathetic appearance; whilst their strength is so redoubtable that without the aid of firearms it would be impossible to cope with them. The natives of Borneo hold them in special dread, and carefully avoid those parts of the forest which they are known to frequent. They are never seen on the ground, but constantly reside in trees, among the branches of which they make their way with surprising agility. Here they build a kind of rude hut by entwining the branches, in which they spend most part of their time, and seldom move abroad, except when urged by the calls of appetite.

They feed entirely on fruits, and are never known to eat flesh, or even eggs, though young individuals, in a state of confinement, are readily taught to relish animal food. Dr. Muller never met with the Orang in Java or Sumatra, in the latter of which islands, however, he had heard of its existence, though it is seldom seen, and appears to be altogether of rarer occurrence than in Borneo.

Mr. Waterton, who observed an Orang in confinement with great attention, soon saw clearly that the tendons in his long and strangely proportioned arms did all his work for him as he jumped from place to place, or whilst he remained suspended from the branch which he had seized. When all his four limbs were collected on the branch, his hinder ones seemed merely to act as steadying props. It was only when the Orang thus exhibited himself that Mr. Waterton could form a correct notion of the astounding strength with which the fore part of his body was endowed. "A movement," he says, "that would have been absolutely impossible to the most active of us lords of the creation appeared easy itself in this unsightly brute. Thus, having witnessed the obvious self-possession and activity of the Orang in a tree, and having seen a full display of its awkwardness and apparent want of confidence after it had descended to the ground, I pronounced it within my mind to be an absolutely arboreal animal in every sense of the word; nor shall the collected writings of all authors, modern as well as ancient, who have given us detailed and positive accounts of this great Ape's achievements on the ground ever convince me to the contrary."

"It is a singular and most interesting sight," says Mr. Wallace, "to see a Mias (which is the Bornean name of the Orang-Outan) making his way leisurely through the forest. He walks deliberately along the branches in the semi-erect attitude which the great length of his arms and the shortness of his legs give him: choosing a place where the boughs of an adjacent tree intermingle, he seizes the smaller twigs, pulls them towards him, grasps them, together with those of the tree he is on, and thus, forming a kind of bridge, swings himself onward, and, seizing hold of a thick branch in his long arms, is in an instant walking along to the opposite side of the tree. He never jumps or springs, or even appears to hurry himself, and yet moves as quickly as a man can run along the ground beneath. When pursued or attacked his object is to get to the loftiest tree near; he then climbs rapidly to the higher branches, breaking off quantities of the smaller boughs, apparently for the purpose of frightening his pursuers. Temminck denies that the Orang breaks the branches to throw down when pursued; but I have myself several times observed it. It is true he does not throw them at a person, but casts them down vertically; for it is evident that a bough cannot be thrown to any distance from the top of a lofty tree. In one case a female Mias, on a durian tree, kept up for at least ten minutes a continuous shower of branches, and of the heavy spined fruits, as large as 32-pounders, which most effectually kept us clear of the tree she was on. She could be seen breaking them off and throwing them down with every appearance of rage, uttering at intervals a loud pumping

grunt, and evidently meaning mischief. When a Mias is once up a lofty tree there is no danger of his getting away, as he will not descend to the lower branches, which he must do to pass to another tree. As soon as he feels himself badly wounded he makes a nest which, if he completes it, is so secure that he can never fall from it. I lost two Miasas that way, both dying on their nest, when I could not get any one to climb or cut down the tree till the next day, when putrefaction had commenced. They choose a horizontal forked branch, and breaking off all the branches in its neighbourhood, lay them across one another till a complete leafy bed is made which quite hides them from below, and from which they will not move afterwards. Their tenacity of life is very great, from six to a dozen bullets in the body being required to kill them or make them fall. Every night the Mias sleeps on a nest similar to that above described, but smaller, and generally placed on a small tree not more than fifty or sixty feet from the ground. The same animal appears seldom to use these nests more than once or twice, and they are, accordingly, very abundant in places frequented by the Mias. They feed all through the middle of the day, but seldom return to the same tree two days running. They seem not much alarmed at man, often staring down upon me for several minutes, and then moving away slowly to a short distance. After seeing one I have often had to go a mile or more to fetch my gun, and in almost every case I have found it on my return within a hundred yards of the place. I have never seen two adult animals together; but both males and

females are sometimes accompanied by half-grown young ones, or two or three of the latter go in company. They very rarely descend to the ground, probably only in search of water." The food of the Orang is the durian. "It seems wonderful," says Mr. Wallace, "how the animal can tear open this fruit, the outer covering of which is so thick and tough, and densely covered with strong conical spines. It probably bites off a few of these first, and then, making a small hole, tears the fruit open with its powerful fingers." Gemelli Carreri, in his voyage round the world, relates a circumstance concerning the Orang in his wild state which is indicative of considerable powers both of reflection and invention. When the fruits on the mountains are exhausted they will frequently descend to the sea-coast, where they feed on various species of shell-fish, but in particular on a large sort of oyster which commonly lies on the shore. "Fearful," he says, "of putting in their paws, lest the oyster should close and crush them, they insert a stone as a wedge within the shell, and then drag out their prey and devour it at their leisure."

Mr. Wallace says that the Dyaks are unanimous in their statements that the Mias never either attacks or is attacked by any animal, with one exception, which is highly curious, and would hardly be credible, were it not confirmed by the testimony of several independent parties who have been eye-witnesses of the circumstance. "This animal is the crocodile of those regions—probably the *Crocodilus bitorcatus*. The natives say "When there is little fruit in the jungle, the Mias

goes to the river side to eat the fruits that grow there, and also the young shoots of some palm-trees which are found at the water's edge. The crocodile then sometimes tries to seize him, but he gets on the reptile's back, beats it with his hands and feet on the head and neck, and pulls open its jaws till he rips up the throat. The Mias always kills the crocodile, for he is very strong. There is no animal in the jungle so strong as he."

Many young Orangs have at different times been brought to England, but none have long survived the change of climate. On the ground they hobbled along, and dragged or swung the body forwards between the long arms, used as crutches, treading on the outer side of the foot. Their agility in climbing was extraordinary; they used the hands and feet as hooks, and instead of bounding from branch to branch, swung themselves from one to the other, the great length of the arms enabling them to reach to a great distance; every movement, however, was quiet and deliberate, but at the same time free and unconstrained. All the specimens were very gentle, affectionate, playful, and intelligent; they were impatient of confinement, and when disappointed subject to paroxysms of anger, throwing themselves about and uttering a whining cry, and even screaming with rage, until pacified.

Mr. Waterton, who came up to London from his seat, Walton Hall, in Yorkshire, expressly to see the Orang-Outan in the Zoological Gardens, says:—"Most amply, indeed, was I repaid for the trouble I had taken. The Orang was of wrinkled and of melancholy aspect, entirely devoid of any feature bordering on ferocity.

As I gazed through the bars of his clean and spacious apartment, I instantly called to my recollection Sterne's affecting description of his captive, who was confined for life, and was sitting on the ground upon a little straw, and was lifting up a hopeless eye to the door. The more I inspected this shaggy creature from Borneo the more I felt convinced that in its own nature it could lay no manner of claim to the most remote alliance with the human race, saving in a faint resemblance of form, but in nothing more. Having observed his mild demeanour and his placid countenance, I felt satisfied that, if ever the animal had been subject to paroxysms of anger when free in its native woods, those paroxysms had been effectually subdued since it had become a captive under the dominion of civilized man. Acting under this impression I asked leave to enter the apartment in which he was confined, and permission was immediately granted by a keeper in attendance. As I approached the Orang he met me about half way, and we soon entered into an examination of each other's persons. Nothing struck me more forcibly than the uncommon softness of the inside of his hands. Those of a delicate lady could not have shown a finer texture. He took hold of my wrist and fingered the blue veins therein contained; whilst I myself was lost in admiration at the protuberance of his enormous mouth. He most obligingly let me open it, and thus I had a good opportunity of examining his two fine rows of teeth. We then placed our hands round each other's neck, and we kept them there a while, as though we had been really excited by an impulse of fraternal affection. It

were loss of time in me were I to pen down an account of the many gambols which took place betwixt us, and I may draw too much on the reader's patience. Suffice it, then, to say, that the surrounding spectators seemed wonderfully amused at the solemn farce before them. Whilst it was going on I could not help remarking that the sunken eye of the Orang every now and then was fixed on something outside of the apartment. I remarked this to the keeper, who was standing in the crowd at a short distance. He pointed to a young stripling of a coxcomb. 'That dandy,' said he, 'has been teasing the Orang a little while ago, and I would not answer for the consequences could the animal have an opportunity of springing at him.' This great Ape of Borneo exhibited a kind and gentle demeanour, and he appeared pleased with my familiarity. Having fully satisfied myself how completely the natural propensities of a wild animal from the forest may be mollified, and ultimately subdued, by art and by gentleness on the part of rational man, I took my leave of this interesting prisoner, scraping and bowing with affected gravity as I retired from his apartment."

The GORILLA (*Troglodytes gorilla*) is considered by eminent zoologists to be the ape known by that name to the Carthaginians, and first used by the Carthaginian navigator Hanno, as the native name of certain "wild men with hairy bodies," which he discovered on the equatorial coasts of Africa, about the sixth century B.C. Firearms being then unknown, the active and ferocious males could not be killed, but specimens of the females were obtained and preserved in a Cartha-

ginian temple till that city was destroyed by the Romans in 146 B.C. But the Gorilla was unknown to modern zoologists until 1847, when Dr. Thomas S. Savage, a member of the Boston Natural History Society, and at the time a medical missionary, obtained, through the Rev. J. I. Wilson, an American missionary at the Gaboon River, some skulls and portions of skeletons of the animal, which he presented to the Boston Natural History Society, where they were described by Dr. Wyman, Professor of Anatomy in Harvard University; and soon after more skulls and skeletons were forwarded to Europe, and examined by Professor Owen and other eminent comparative anatomists, who described them in many valuable and elaborate papers. In 1861, M. Du Chaillu published his 'Explorations and Adventures in Equatorial Africa,' in which he vividly described his encounters with this formidable animal, which had not been seen by civilised man since the time of the Carthaginian navigator. The work caused a great sensation and much discussion as to its truthfulness, eminent authorities strongly suspecting its statements, and others as strongly believing the narrative. Its truthfulness, however, is now generally acknowledged.

The largest male shot by M. Du Chaillu measured five feet eight inches in height, but Professor Wyman has the skeleton of one which must have been six feet two inches in height when alive. The breadth of the chest, and of the back from shoulder to shoulder, is one third greater than in a man of the same stature; and the trunk, from the shoulder to the middle, is one half

larger than that of a man of equal height. When standing erect, the fingers of the fore hands or arms reach to the knees. The head is large and the forehead receding. The eyes are gray, large, deep-sunken, and glare fiercely beneath immense, overhanging bony ridges, and the whole aspect is hideous as some nightmare vision. The jaws are of tremendous size and power, set with teeth of immense strength, the canines being similar to those of the lion and tiger. The strength of these jaws is so great that the animal can flatten a gun barrel between his teeth. The naked parts of the face and the palms and soles are intensely black, and also the breast of the adult, which is without hair, probably from the animal's habit of beating the breast when enraged, and the hair is also always rubbed off on the back, from leaning against the trunks of trees when asleep. The rest of the body is well clothed with iron-gray hair, except the head, where it is of a reddish-brown, and the arms, on which it is long and almost black. The female's hair is in all parts of a reddish tint.

The Gorilla goes through the jungle on all-fours, but when he sees men erects himself, and looks them boldly in the face. When enraged, he beats his breast with his large fists, till it resounds like an immense bass drum, which is his mode of offering defiance, meantime giving vent to roar after roar. The roar of the Gorilla is the most singular and appalling noise heard in the African forests. It begins with a sharp bark, like that of an angry dog, then glides into a deep bass roll, literally and closely resembling the roll of

distant thunder. It is so deep that it seems to proceed less from the mouth and throat than from the deep chest and vast paunch. The Gorilla's habits are solitary, and it lives with its mate a wandering life in the most lonely parts of the forest, without a settled place of abode or haunt. The old male is often found entirely alone, while the female is frequently accompanied by a young one. The young seem to stay with the mother until two or three years old, when four or five herd together. The negroes unanimously assert it to be horribly malignant, lying in wait upon the lower branches of trees, and catching up the unwary traveller by the neck with its great hind hand, then strangling its victim, and dropping the body when it no longer moves. But it never eats the flesh of man, or any animal that it has wounded or killed. Its food is exclusively vegetable, consisting of the leaves of certain plants, some kinds of berries and nuts, succulent stems, and the pith of trees, and its powerful jaws and teeth seem to be provided especially for cracking hard nuts, and gnawing iron-hard trees to get at their pith. As far as has been ascertained, the Gorilla inhabits a district extending about two hundred miles north, and the same distance south, of the equator, and about three hundred miles inland.

CHAPTER XI.

THE GIBBONS—THE SIAMANG—THE AGILE GIBBON—
THE ATELES—THE QUATA—THE BABOON—THE COM-
MON BABOON—THE CHACMA—THE MANDRILL—THE
DRILL.



THE GIBBONS (*Hyllobates*) are remarkable for their slender forms and long arms; the hands are long and hook-like, as also the feet, or hinder hands; in the latter the thumb is large and strong, and the first and second fingers are often more or less united. In the Siamang this union is carried to the last joint, but in some species it is variable, the toes being sometimes united, and sometimes not. In size the Gibbons are far inferior to the orang, the largest not exceeding three feet one or two inches in height, but most are not more than two feet six inches, and when they stand erect their hands reach the ground; the chest is tolerably broad, but the abdomen is contracted, and the hips narrow. They inhabit Java, Borneo, Sumatra, Malacca, and Siam. They haunt the forests, and are rarely seen at a distance from them. Gregarious, but shy and timid, they keep up a howling concert, resembling in this respect, in some degree, the howling monkeys of America, and having, some of them, guttural sacs like that tribe. The voice of the

Gibbons is loud and sonorous, resounding through the woods; it is principally exerted in the morning, and the whole troop join in concert.

They are decidedly arboreal, and are active and rapid in their movements, launching themselves from branch to branch at vast distances (Duvaucel says even forty feet), the arms and hands alone being used in giving impulse to the body, which hangs, as it were, suspended. The action is so quick, and the hold taken of branch after branch by each hand alternately, as the animal pursues its course, so momentary, that they appear almost to fly from bough to bough, assuming in their gambols every imaginary attitude. Hanging by their long arms, they swing themselves forward with admirable facility, seizing, in their rapid launch, the branch at which they aimed; they throw themselves from a higher to a lower perch with consummate address, and again ascend to the loftiest with bird-like rapidity. A Gibbon in confinement has been seen to clear spaces of eighteen feet with the greatest ease, and that for an hour together without intermission, like a bird flitting rapidly from perch to perch, the branches appearing as if merely touched as the animal continued its exercise, the most wonderful precision marking every evolution. For example, a live bird was let loose; the Gibbon marked its flight, launched itself to a distant branch, caught the bird with one hand in passing, and seized the branch with the other hand, as if that alone had been its aim. But when surprised on the open plain they are altogether as helpless.

When taken young their disposition is gentle and

affectionate, and they show great intelligence. Their motions are neither rude nor precipitate, and their food, which consists chiefly of fruits, is taken without greediness or impatience. "No region of the earth," says Mr. Marsden, "can boast an equal abundance and variety of indigenous fruits." The mangustin, which has been termed the "pride" of these countries, with an extensive variety of the jack, the mango (of which at least forty varieties are enumerated), the plantain, the guava, the pine-apple, the papaw, the custard apple, the pomegranate, and almost every species of fruit which grows within the tropics are here found in the greatest variety. Java produces many kinds of oranges, citrons, lemons, and the pumplemoos, known in Bengal as the Batavian lime, and in the West Indies as the shaddock, besides numerous others with which Europeans are unacquainted. In some of the mountainous tracts are to be found peaches, Chinese pears, and other fruits imported from Japan, the Cape of Good Hope, and China. Nothing is more striking in the Malayan forests, where the Gibbons are numerous, than the grandeur and luxuriance of the vegetation; the magnitude of the flowers, creepers, and trees contrasting most strikingly with the vegetation of England. Compared with our trees, even our largest oak is a mere dwarf. Creepers and vines appear intertwining larger trees, and hanging suspended for more than a hundred feet, in girth not less than a man's body, and many much thicker; the trees are seldom under a hundred, and generally from a hundred and sixty to two hundred feet in height. "One tree that we measured," says

Sir T. S. Raffles, "was in circumference nine yards! and this is nothing to one I measured in Java."

There are several species. The largest is the SIAMANG of Sumatra, of a black colour, with a large pouch under the chin, covered with naked black skin. This species, like some others, appears to be more sluggish, but make good use of their acute eyes and ears, and are generally off before the enemy approaches near enough for a capture. The Siamangs, sluggish and timid as they are, exhibit strong maternal affection; for though, if any of the troop are wounded, the rest abscond and leave them to their fate, the mother will remain with her little one if it is hurt, and will suffer herself to be captured rather than abandon it. The females are also generally very attentive to their offspring.

The AGILE GIBBON (*Hyllobates agilis*); also of Sumatra, is an interesting species. The face is naked, and of a bluish-black. In the male the cheeks and a band above the eyebrow are of a yellowish-white, beautifully contrasting with the clear chocolate-brown of the upper half of the body. The lower extremities are of the same dark colour, and the lower part of the back and the fore part of the thighs are of a yellowish-brown. The shade of the colour of both the dark and light parts, however, vary considerably, according to age, and the dark parts above sometimes occupy a greater or lesser space. The hair in healthy animals is clear and fine, except upon the neck, where it becomes lengthened and somewhat woolly, or curled. The young are always much paler in colour than the adults or those at an advanced age, and the very young animals

are of a uniform yellowish-white. The general height scarcely exceeds two feet seven or eight inches, and the arms reach the ground when the animal stands erect.



THE AGILE GIBBON.

In captivity they are not so lively as some monkeys, as might be expected from the impossibility of their exerting that freedom of motion on which their vivacity in a state of nature so much depends; but though timid they are soon reassured, fond of being caressed, inquisitive, and become familiar, and even playful.

The *Ateles*, a genus of *Sapajous*, or American monkeys, called also SPIDER-MONKEYS, present numerous and remarkable modifications of structure which readily

distinguish them from all other groups of *Quadrumana*. Their most prominent characteristics are their long, slender, and powerfully prehensile tails, and their fore hands, which are either without thumbs, or with only a very small rudiment of that organ. They are also distinguished by their small round heads, corpulent bodies, and remarkably long, slender limbs, which give them much of the general appearance of a spider. In ascending or descending trees, or in traversing the branches, the tail is in continual requisition; they coil it round branch after branch in their passage, turning it in various directions, and applying it with no less strength than precision. They often suspend themselves by it exclusively, and, swinging until a sufficient impetus be gained, launch themselves to a distant branch, or, stretching out their arms, seize it as they vibrate towards it. They are, in fact, essentially swingers and not leapers among the branches. The advantages of this additional instrument of prehension are palpable; its sense of touch is finger-like; and it is capable, like the proboscis of the elephant, of seizing small objects with great address. They are said to introduce the extremity of the tail, as a feeler and hook, into the fissures and hollows of trees, for the purpose of obtaining eggs, young birds, and large insects; they are reported also to fish for crabs or other crustacea along the banks of rivers by means of this organ; but with respect to this latter part of the story we are somewhat sceptical. Leaves, wild fruits, insects, eggs, and young birds, constitute the diet of the Spider-Monkeys.

Dampier relates that when a troop of *Ateles* have occasion to pass any of the larger rivers of South America, they select a situation in which the trees are highest and project farthest over the stream; then, mounting to the topmost branches, they form a long chain by grasping one another's tails successively. This chain being allowed to hang freely at the lower end, whilst it is suspended from the top, is put in motion, and successively swung backwards and forwards till it acquires an impetus sufficient to carry it over to the opposite bank. When this is accomplished, the animal at the lower end catches at the first branch which comes within his reach, and mounts to the highest, where, when he is firmly attached, the other end of the chain is permitted to swing, and thus the whole troop are passed over.

They are very intelligent, easily domesticated, and soon become strongly attached to those who treat them kindly. They display none of the insatiable curiosity and petulance of the common monkeys; but their character is sedate, and even approaches melancholy. If their passions are more difficult to excite and less violent, their affections are far stronger; and if they have not the amusing tricks of other monkeys, they are free from their fickleness and mischief. Nor is it without being strongly disposed to question the nature of the act, that European sportsmen, unaccustomed to shooting monkeys, witness for the first time the dying struggles of these animals. Without uttering a complaint, they silently watch the blood as it flows from the wound, from time to time turning their eyes upon

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the sportsman with an expression of reproach which cannot be misinterpreted; some travellers even go so far as to assert that the companions of the wounded individual will not only assist him to climb beyond the reach of danger, but will even chew leaves and apply them to the wound for the purpose of stopping the hæmorrhage.

The *Ateles*, as well as all the other American *Quadrumana*, are esteemed as an article of food by the native Indians, and even Europeans, whom curiosity or necessity has induced to taste it, report their flesh to be white, juicy, and agreeable. They are skinned, and roasted over a wood fire. The only thing disgusting about it is a strong resemblance which the whole body, and particularly the head and hands, bear to those of a young infant. A French writer, speaking of monkeys as a dish, says, "They are excellent eating," and that "a *soupe aux singes* will be found as good as any other, as soon as you have got over the aversion to the *bouilli* of their heads, which look very like those of little children."

There are several species. One of the most interesting is the *Quata* or *Coaita* (*Ateles paniscus*, Geoffroy) which inhabits Surinam, Guiana, and Brazil. Its body is covered with long, but coarse, black hair, thinner on the under parts, and without any mixture of a woolly texture. The fore hands want the thumb; the hinder are formed like the other *Quadrumana*, but with longer fingers; the face and ears are of a flesh colour, with a coppery tinge. Among all the monkeys with prehensile tails, Humboldt thinks that this species possesses the

most perfect use and sensibility of it; it can even, without turning its head, introduce it into narrow chinks or rents, and hook out any substance. He never observed the species use it, however, to convey food or any article to the mouth. It is terminated on the under side, with a tender and fine skin, which seems to be endowed, like the hands, with the sense of touch. It makes use of it to grasp any object of support, suspends itself, and uses it to draw towards it any objects which are beyond the reach of its hands. This member is continually in use, and is never relieved from one object until the feet are firmly fixed, when it is again wound round some other object of support, as if the feet were not sufficiently capable of maintaining the animal's position. This curious monkey, apparently possessing all the exterior necessities for great activity, is, nevertheless, Frederic Cuvier remarks, one of the most sluggish. It moves with slowness, and, as it were, with a dragging motion. The limbs are placed in the necessary positions with deliberation, and as if every movement required a fresh exercise of thought to determine their position. They inhabit the banks of the Oronooko where they associate in large troops, and are often seen suspended from the trees, hanging to each other by tail and hands, in the most grotesque groups. At another time they may be seen, under the most scorching sun, to throw back their heads, fold their arms upon their backs, and, raising their eyes to the sky, remain in this position for several hours.

This species is easily domesticated and when taken young it becomes very familiar, and exhibits con-

siderable intelligence. Mr. Gardner, of Brazil, describing one named Jerry which he had for some time, says, "Jerry almost always rode on the back of a large mastiff dog that accompanied us, and in this manner performed a journey of several thousand miles. These two animals were greatly attached to each other, and it was often an amusing sight to see them gambolling together. Before starting, the dog used to go every morning to the place where the little monkey was tied, and wait till it was put upon its back, and its cord made fast to its collar. In travelling, it was not at all particular as to whether its face was towards the head or tail of the charger, except in going down hill, when its face was turned forwards, and, to prevent itself from slipping over the dog's head, it made use of its long prehensile tail as a crupper, by coiling the extremity round the root of that of the dog." Acosta in his 'History of the West Indies,' relates the following anecdote of a Quata which belonged to the Governor of Carthagera :—"They sent him," says he, "to the tavern for wine, putting the pot in one hand and the money in the other; they could not possibly get the money out of his hand before his pot was full of wine. If any children met him in the street and threw stones at him, he would set his pot down and cast stones against the children, till he had assured his way, then would he return to carry home his pot. And what is more, although he was a good bibber of wine, yet he would never touch it till leave was given him."

The BABOONS or *Cynocéphali* are among the largest,

the most ferocious and the most disgusting of the *Simiæ*. The term *Cynocephalus* was applied by Aristotle to an Egyptian or Arabian species, in allusion to the dog-like form of the head, and has been happily selected by Cuvier as the generic term of a group of which this is one of the most marked characteristics. Their shoulders are thick and massive; the chest though narrow is very deep; their limbs, more equal in comparative length than those of the *Simiæ* generally, and especially of the orangs and gibbons, are extremely muscular; and the enormous size of the canine teeth which they are always ready to display, remind us of those of the tiger; the eyes are fierce, scowling, and malicious, and beetled over by a strongly marked ridge above the eyebrow; the neck is short and thick, and well adapted for the support of the huge head, the jaws and facial portion of which are enormously developed, so as to form a thick heavy truncated muzzle, at the end of which the nostrils open as in the dog, and like those animals, they usually go on all fours. They can scarcely assume, and not at all maintain, an erect attitude; they are to a great degree terrestrial in their habits, taking up their abode in rocky and mountain districts rather than forests, except in the instance of one or two species. As a general rule, however, though they climb trees with facility, they prefer craggy rocks and precipices, among which they dwell in security. As these animals sit crouched up, gazing with mingled suspicion and hatred on all who approach them, they never fail to excite disgust and apprehension.

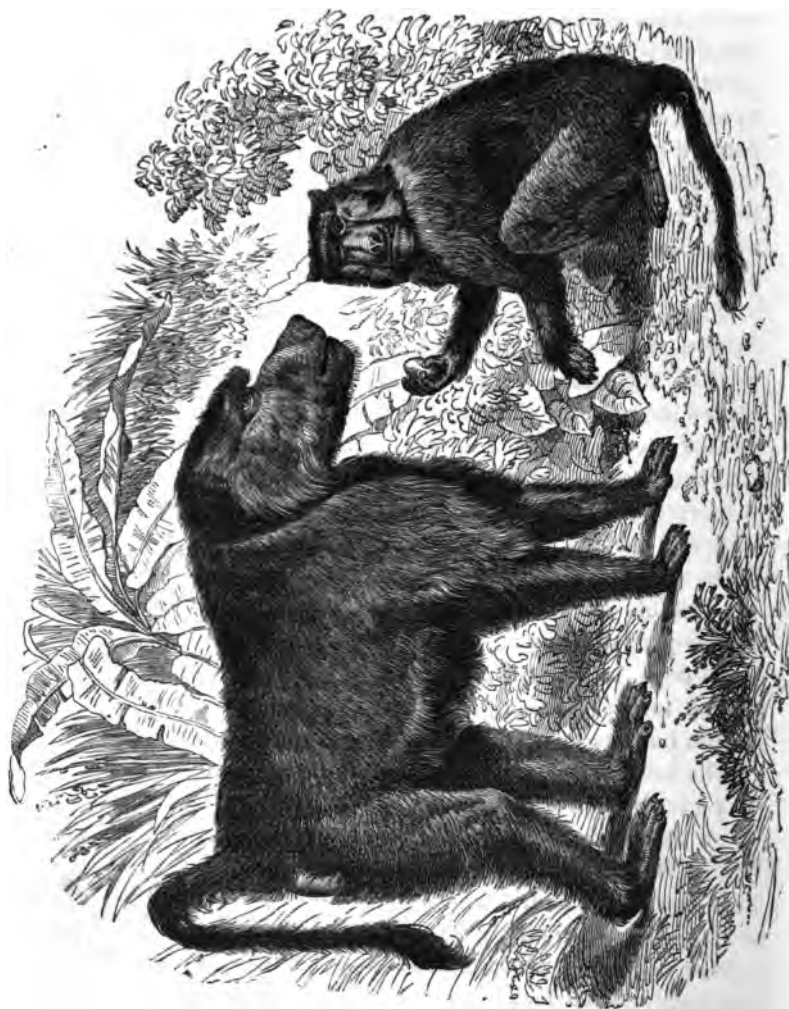
Their food consists of bulbous roots, fruits, berries, and grain, together with eggs, insects, and reptiles; indeed, they are to a certain extent carnivorous, and in domestication relish cooked meat, and even devour raw flesh with avidity. They greedily devour scorpions, which they seize, and nip off the sting with so rapid an action, as to prevent their hands from being wounded.

The COMMON BABOON (*Cynocéphalus papio*), a native of Guinea, is very often brought to Europe. It is of a uniform reddish-brown colour, slightly shaded with sandy or light red upon the head, shoulders, body, and limbs, the whiskers being of a light fawn, the face black, and the upper eyelids white. The cheeks are swollen under the eyes, and the tail is not tufted. This species inhabits the coast of Guinea, and is that most commonly seen about the streets and in menageries and museums. When young it is gentle, curious, gluttonous, and incessantly in motion, smacking its lips quickly, and chattering when it wishes to beg contributions from its visitors, and screaming loudly when refused or tantalised. As it grows older, however, it ceases to be familiar, and assumes all the morose look and repulsive manners which characterise the baboons in general. The specimen observed by Buffon was full grown, and exhibited all the ferocity of disposition and intractability of nature common to the rest of its kind. "It was not," says he, "altogether hideous, and yet it excited horror. It appeared to be continually in a state of savage ferocity, grinding its teeth, perpetually restless, and agitated by unprovoked fury. It was obliged

to be kept shut up in an iron cage, of which it shook the bars so powerfully with its hands as to inspire the spectators with apprehension. It was a stout-built animal, whose nervous limbs and compressed form indicated great force and agility; and though the length and thickness of its shaggy coat made it appear to be much larger than it was in reality, it was, nevertheless, so strong and active, that it might have readily worsted the attacks of several unarmed men."

The CHACMA is a native of South Africa. The colour is of a greenish or grayish-black, paler upon the fore part of the shoulders and flanks. The neck is clothed with long hair, in the form of a mane, which has furnished Geoffroy with a character for the name he has attached. The skin of the face and extremities is of a purplish-black, relieved around the eyes by a paler tint and by the upper eyelids, which are nearly white, as in the mangabey or white-eyelid monkey. It is also remarkable in having the naked callosities very small. A full-grown Chacma is more than a match for two good dogs, being equal in size and superior in strength to the largest mastiff, and though there is no animal which hounds pursue with so much fury, yet the boers of the interior would rather set their dogs upon a lion or panther than upon one of these baboons.

In their wild state they associate in large numbers, and it is customary for the troops to descend into the rich secluded valleys, where plants flourish, in quest of food. When suddenly surprised the cry of alarm is raised, and the troop ascend the rocky cliffs, often several hundred feet in height, with astonishing agility,



CHACMAS.

the young clinging to the mothers, and the old males bringing up the rear. Mr. Burchell states that on one occasion a small company of them, being chased by his dogs, suddenly turned round and defended themselves most effectually. One dog was killed on the spot by a bite through the great blood-vessels of the throat, and another was disabled in consequence of a lacerated wound which laid its ribs bare. Even the leopard, hyæna, and wild-dog, are sometimes mastered by a troop of these animals, although the leopard, surprising individuals, destroys numbers.

The MANDRILL is the largest of the whole genus, and may be readily distinguished from all the other baboons by the enormous protuberance of its cheeks and the bright and variegated colours which mark them, as well as by its short upright tail. The full-grown Mandrill measures above five feet when standing upright; the limbs are short and powerful, the body thick and extremely robust, the head large and almost destitute of forehead, the eyebrows remarkably prominent, the eyes small and deeply sunk in the head, the cheek-bones swollen to an enormous size, and forming projections on each side of the nose as large as a man's fist, marked transversely with numerous alternate ribs of light blue, scarlet, and deep purple; the tail not more than two inches in length, and generally carried erect; the callosities large, naked, and of a blood-red colour. The general colour of the hair is a light olive brown above, and silvery gray beneath, and the chin is furnished underneath with a small pointed yellow beard. The hair of the forehead and temples grows upwards,

and meets in a point on the crown, which gives the head a triangular appearance; the ears are naked, angular at their superior and posterior borders, and of a bluish-black colour; and the muzzle and lips are large, swollen, and protuberant. The former is surrounded above with an elevated rim or border, and truncated like the snout of a hog. This formidable animal, the fiercest and most powerful of the genus, is a native of the Guinea coast, and has been well known for a long period in our menageries. In an adult state the colours of its fur may vie with any of the *Quadrumana*, and the general effect is heightened at a little distance by the rich blue and purple shades of the muzzle, lips, and other naked parts of the skin. Upon a nearer view, however, these beauties do not compensate for its otherwise disgusting appearance. It is only in the adults where the brilliancy of the colouring is observed. In the young the hair is of a uniform tawny-green, paler underneath and inside the legs, and assuming a yellowish tinge on the cheeks; the ridges upon the muzzle commence to appear of a livid blue, and the bright red of the nose and lips is of a dull flesh colour. The females are less in size, and the colouring of the naked parts is never so vivid.

Although in a state of nature the Mandrill is malicious and most dangerous, it has been tamed. "Happy Jerry," the property of Mr. Cross, and so long the prominent attraction to Exeter Change, was a ribbed-nose baboon. He is described to have been docile to his keepers, but easily exasperated by strangers; and, among other accomplishments, had been taught to drink *gin-sling* and

smoke *tobacco*. In the first he delighted, but we rather think the latter was not such a favourite, and a bribe of gin and water was generally promised before his performance. His cage was furnished with a small, but strong, arm-chair, in which, when ordered, he would



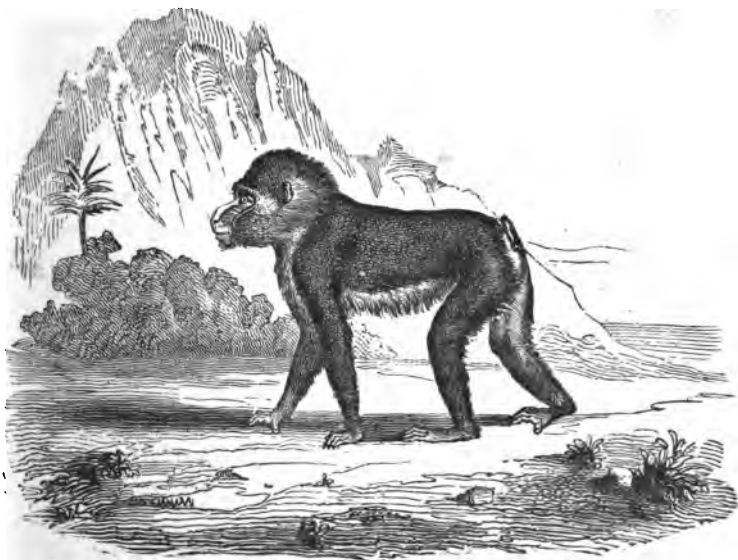
HEAD OF AN AGED MANDRILL.

seat himself with great gravity, and await further orders. All his manœuvres were performed with great

slowness and composure. His keeper, having lighted the pipe, presented it to him; he inspected it minutely, sometimes feeling it with his finger, as if to know if lighted, before inserting it in his mouth; it was then introduced, almost up to the bowl, but with that part generally downwards, and it was retained without any appearance of smoke for some minutes, during which time the animal completely filled his cheek-pouches and capacious mouth, and would then exhale a volume, filling his cage from mouth, nose, and sometimes even the ears. He generally finished with gin and water, which was handed to him in a goblet; this he grasped in one hand, and was not long in discussing. He was possessed of enormous strength. Two men could with difficulty withdraw the end of a rope he one day seized, though they were assisted by the resistance of their feet upon the base of his cage. He was fed chiefly upon vegetables, and preferred them cooked; but when he visited Windsor, where he was exhibited to his Majesty, he is said to have dined upon hashed venison with no ordinary degree of avidity.

The DRILL (*Cynocéphalus leucophoeus*) is likewise a native of the coast of Guinea, and like the mandrill, is distinguished by a short, erect, stumpy tail, scarcely two inches in length, covered with short, bristly hair. The size and power of the animal are much inferior. The colours of the body bear some resemblance to those of the mandrill, but they are more mixed with green on the upper parts, and are of a lighter or more silvery hue beneath. The face and ears are naked, and of a glossy black colour, like polished ebony; there is a small, orange-

coloured beard on the chin ; the cheek-bones form prominent elevations on each side of the nose, as in the mandrill, only not nearly so large ; neither are they marked with the same series of alternate ridges and furrows, nor with the brilliant and varied colours which is the chief characteristic of that species ; the palms of the hands and soles of the feet are naked, and of a deep copper colour, and the naked callosities are of a bright red. The female differs from the male by her smaller size, shorter head, and much paler colour ; and the young males exhibit the same characteristics up to the time of their second teething.



THE DRILL.

CHAPTER XII.

THE BUFFALO—THE YAK—THE BISON—THE MUSK OX.

THE INDIAN BUFFALO (*Bos Bubalus*) exists in a wild state in many parts of India ; and those in Persia, Siam, Cochin-China, China, Sumatra, North Africa, and the South of Europe are used as domestic animals, doing labour and drawing carriages, for which purposes they are managed by a ring through the cartilage of the nose. There is, however, something treacherous and designing in its appearance, and among the herds of India there always appears a certain jealousy of strangers, and especially of Europeans, whom they view with a suspicious glance, and not unfrequently attack without any warning. It is a powerful and savage animal, with huge, compressed horns, rising above the head in the form of a bold crescent. They delight in the deep verdure on the borders of pools and marshes, especially where surrounded by tall grass, so as to afford concealment and shade while the body is covered by the water. In such situations they appear to enjoy perfect ecstasy, having in general no part above the surface but their eyes and nostrils, the horns being kept low down, and consequently out of sight. Frequently nothing is perceptible but a few black lumps in the waters, appearing like small clods ; and a traveller

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THE NAI

(THE WATER BUFFALO OF INDIA.)

THE NAI, or water buffalo, exists in a wild state in Persia, Siam, and the North Indies, and the domesticated animal, during the last century, has been introduced into the West Indies. It is a large animal, and surpasses the European ox in weight, and is distinguished by its long, curved horns, and designations in the Sanscrit language, the Nais of India being a synonym for a herd of strangers, and hence, they are called Nais, or Nais with a horn, and are generally attacked without provocation by a new and savage animal, and the horns being fixed to the head in the middle of the forehead, they are caught in the water, and by no means of the marshes, and are often seen to be in grass, so as to allow the animal and shade of the body is covered by the water. In some situations they appear to enjoy perfect safety, having in general no part above the surface but their eyes and nostrils, the horns being kept low down, and consequently, out of sight. Frequently nothing is perceptible but a few black lumps in the waters, appearing like small clods; and a traveller



Buffalo.

Musk Ox.

Bison.

Kangaroo.

would scarcely expect to see, as often happens, twenty or thirty great beasts suddenly rise. The banks of the Ganges and Cozzimbazar Island have long been favourite haunts of the wild Buffalo. They are hunted with elephants, in the same manner as the tiger, but with less danger. They often, however, charge and gore the elephant, though generally, from the number and noise of the pursuers, fly, until closely pressed or enraged by wounds.

The Cape Buffalo (*Bos* or *Bubalus Caffer*) has often been confounded with the animal of Southern Europe; but it is entirely of a different form, is a much more ferocious and dangerous animal, and has never yet been domesticated, or used for any laborious purpose. It is an animal, Burchell remarks, found nowhere but in the extra-tropical part of Southern Africa, and is widely different from every other species of the ox tribe, and most remarkable by its horns, which, though not of more than ordinary or proportional length, are so unusually broad at their base as to cover the whole forehead, and give to it the appearance of a mass of rock; an appearance to which the ruggedness and unevenness of their surface greatly contribute. Its countenance exhibits a savage and malevolent expression; its bulk far exceeds that of the ox, although its height is not much greater; but it is altogether more robust and strongly made. The African Buffalo is found in abundance in Southern Africa, and stretches along the east coast as far into the interior as has been yet explored. In the colony of the Cape, it is, however, becoming much less plentiful, from the constant warfare kept

up against it, as well as the other wild animals. The hide is thick and tough, and is in great request with the farmers for thongs and harnesses. Of it are made the only halters that can be depended upon for securing horses and oxen, so that these beasts cannot get loose by snapping them asunder, which they are otherwise apt to do when lions and wolves make their appearance in the neighbourhood.

Sparmann informs us that he received many accounts from the natives respecting the difficulty experienced by the lion in killing this powerful and resolute beast, which it does not venture to attack openly, but that, stealing on the Buffalo, "it fastens with both its paws upon the nostrils and mouth of the beast, and keeps squeezing them close till at length the creature is strangled, wearied out, and dies." A colonist, according to Sparmann, had had an opportunity of seeing an attack of this kind, and others had reason to conclude that something of this nature had passed, from seeing Buffaloes which had escaped from the clutches of lions, and bore the marks of the claws of these animals about their nose and mouth. They asserted, however, that the lion itself risked its life in such attempts, especially if any other Buffalo was at hand to rescue that which was attacked. It was said that a traveller once had an opportunity of seeing a female Buffalo with her calf, defended by a river at her back, keep for a long time five lions at bay, which partly surrounded her, but did not (at least as long as the traveller looked on) dare to attack her. We have been informed, from a very good authority, that, on a plain to the east of Kromme river, a lion had been

gored and trampled to death by a herd of cattle, having, urged probably by hunger, ventured to attack them in broad daylight.

The traveller Thunberg had an encounter with a Buffalo bull of great size, which nearly terminated fatally. It was met in a deep thicket near the Koukouma river, and killed two of the horses of the party on the spot, and drove the naturalist and two of his companions to seek refuge in the branches of tall trees, where they climbed, and remained until the savage brute departed. So tremendous was this animal's attack that the first horse fell on its back, with its feet in the air, and all its entrails hanging out, in which state it lived almost half an hour; while the second horse was perforated through the breast by its horns, which even went through the saddle, and was thrown to the ground and died instantly, with many of its bones broken.

Like all animals, the Cape Buffalo is most formidable when its courage is called forth by affection for its progeny. The same remark applies also to the common tame Buffalo, even when it has long been employed like an ox to draw waggons; no force can separate it from its young. To effect this, stratagem must be used, and the animal has been known to attack and sometimes to kill the man she suspected of having deprived her of her calf. It is very dangerous for an inexperienced stranger to intrude upon them at this season; they scowl savagely at him with their small, fiery eyes, they will not retreat an inch, but placing themselves between the intruder and their young, they

incline their heads, and are pretty sure to rush at him if he make too near an approach. So sensitive, indeed, are they that even the flight of a bird near their calf seems to irritate them. In Dr. Livingston's 'Travels' there is a very spirited engraving of a Buffalo cow rescuing her calf from a lion. "A toss from her," says the doctor, "often kills him. It is questionable if a single lion ever attacks a full-grown Buffalo."

The colour of the domesticated animal is generally dark, the hair scattered and coarse, the horns large, reclining backward and sideways, with the tips turned up. With ample feeding and care the tame Buffalo becomes a fine animal, sleek and fine-coated, and possessing great spirit and courage. The European domestic race exceed in size those of India, except such as are chosen for fighting with the tiger or elephant, and stand from four to five feet high at the shoulder. The wild animal is of larger proportions. The only parts of Europe where the Buffalo is largely employed as a beast of burden, and in the yoke, are Italy and Spain.

The YAK (*Bos grunniens*) is evidently allied to the Musk Ox of North America. It inhabits all the loftiest plateaus of high Asia, between the Altai and the Himalaya, the Belur Tag, and the Peling Mountains, and is found tame as well as wild. It cannot live on the south side of the Himalaya beyond the immediate vicinity of the snow, where the tribes of Cachars of the sub-Himalayas rear large herds of it. There are several varieties. It is wild, sullen, and ferocious; nevertheless the Tartars have domesticated this species, from which they obtain milk, butter, flesh, skin, and woolly

fur, which they manufacture into clothing, tent-cloths, and ropes. The Yaks dislike the warmth of summer, and hide themselves in the shade and water ; they swim



THE YAK.

well ; both sexes grunt-like a pig. The calves are covered with rough, black, curled hair like a curled-haired dog. When three months old they obtain the long hair on the body and tail. They willingly live with the common cows, and breed with them. The

Yak is also used as a beast of burden; it is sure-footed, and, though low in stature, is very strong. It is guided by the nose. That used for riding is a very much handsomer animal. It has a stately hump, a rich silky hanging tail nearly reaching to the ground, twisted horns, a noble bearing, and an erect head. They are very shy, and kick with their hind feet, turning their heads round perpetually, as if about to gore their riders. Those used for the plough are ugly and short-legged, and hold their heads very low. The beautiful long silky hair hanging from below the belly is almost, if not entirely, wanting in them, as well as the bushy tail, which their avaricious owners commonly cut off as an article of trade. For ages the Tartars have used the flowing tail of the Yak for a standard in battle; and in India it is often mounted on an ivory or silver handle, which state elephants are trained to wave gracefully with their trunks.

The AMERICAN BISON is far larger and more bulky than our ox; the head is very ponderous, the forehead broad, bold, and elevated; the horns are planted widely asunder at the base, with an arched ridge between them; they are short and sharp, with a slight curvature directed upwards. The hind quarters seem small in proportion to the fore quarters, which, with the head, have their apparent magnitude increased by a thick shaggy coat of long woolly hair, forming the same sort of mane as we see in the lion, and adding much to the animal's grim and savage appearance. The hind quarters are clothed with short curling hair, which becomes somewhat woolly in the depth of winter, but falls off

almost entirely in the summer, at the latter part of which the animal has acquired a new coat of a dark, glossy, blackish brown, which lengthens during the continuance of winter, loses its lustre, and becomes of a dirty yellowish brown. The eyes are small and piercing. The limbs are short, and very muscular. The tail is about twenty inches in length, and nearly naked, except at the tip, where it is terminated by a tuft of long black hairs. The Bison, when full grown, will sometimes weigh 2000 pounds, but twelve or fourteen hundredweight is the average weight of a full-grown bull. Its length, exclusive of the tail, is about eight feet and a half, and its height at the fore quarters upwards of six. The cow has a smaller head, and a shorter mane than the bull, and is also generally less in stature.

In its habits the Bison is in a certain sense migratory; the herds, which consist either of bulls exclusively or of cows headed by one or two old bulls, wander constantly from place to place in search of food. The tender grass which springs up after a fire has spread over the prairie is a favourite article of diet; and they congregate wherever salt-springs or lakes are plentiful, being partial to salt, which they lick with avidity, and which is evidently needed as conducing to health. Morning and evening are the times in which the Bisons feed. In summer, during the heat of the day, they indulge themselves in bathing or wallowing in the marshy swamps of the prairies, or even in the deep rivers, for they swim with the greatest ease. In winter, however, the bath is discontinued, and as food becomes scarcer they have

to employ a greater part of their time in obtaining it. They then dig away the snow with their feet in order to reach the grass beneath; and they travel from marsh to marsh in quest of the rushes, sedges, &c., which now constitute a welcome supply. The males and females associate together from the end of July to the beginning of September, after which the females separate from the males, each party, as we have said, forming itself into distinct herds. It is only while the males associate with the females that the former are dangerous to man, from whom at other times they turn and flee with precipitation, unless, indeed, when wounded or hard pressed. At this season they rush upon any one that ventures to approach them, and not only so, but engage among themselves in the most desperate conflicts, the loud roaring of the assembled multitude resembling, it is said, the noise of thunder.

Formerly the range of this noble animal in North America was much more extensive than at present. It has retired before the influx of the white population to remote and almost unvisited districts, where it still roams in vast herds, tenanting the prairies watered by the Arkansas, Platte, Missouri and upper branches of the Saskatchewan and Peace rivers, and the flat limestone district north of the Great Slave Lake, to the 63rd or 64th degree of latitude. At no remote period the Bison was common in the western parts of Pennsylvania, and in Kentucky herds existed as late as the year 1766; at present, however, the animal is rarely seen south of the Ohio, or on the east side of the Mississippi. In New Mexico and California, on both sides

of the rocky mountain-chain, it is very numerous, and its numbers are said to be increasing in the wild districts westward of the sources of the Saskatchewan, a passage through the mountains there having afforded the means of retiring to a safer district. Captains Lewis and Clarke saw vast numbers of Bisons assembled on the banks of the Missouri. "Such was their multitude that though the river, including an island over which they passed, was a mile in width, the herd stretched, as thick as they could swim, completely from one side to the other." The same travellers state that they saw a moving mass of these creatures, to the number of twenty thousand, darkening the plains.

Hunting the Bison is a sport in which both the colonists and the Indians take the greatest delight; the former use the musket, as do the Indians also, but not always; one of their modes being that of surrounding the herds, not only of Bisons, but of elks and deer, congregated in a given space, and gradually driving them into impassable ravines, or upon the precipitous confines of rocky cliffs, where with lances, and bows and arrows, they kill as many as they desire. The danger attending this mode arises from the emergency of their situation, for, emboldened by numbers and urged on by despair, the troop will often break through the line of hunters, trampling down all in their way. Sometimes they are driven into a small space by setting fire to the prairies all round, and, being greatly terrified by the flames, they lose all conduct or presence of mind (if the expression be allowed) and are easily slaughtered. In this manner it is said that vast numbers, even 1500 or

2000; have been killed at a time. Sir John Franklin describes other methods practised by the Indians, one



HUNTING THE BISON.

of which is by driving the herd into a pound; another by hunting down a single animal on horseback, and shooting it in full career. The flesh of the Bison is regarded as excellent, resembling, when the animal is in good condition, well-fed beef; that of the females in full flesh is usually preferred, as being finer grained than that of the bulls; the tongue is a great delicacy, as is also the hump of flesh on the back. The skins of the Bisons are of too loose and spongy a texture

to make tough or durable leather, but dressed in the Indian manner, with the hair on, they form excellent blankets, the hair being soft and woolly. A good Bison skin thus dressed, will sell for three or four pounds in Canada, where they are used as cloaks or wrappers by persons travelling over the snow in sleighs.

The Musk Ox inhabits principally the barren lands of North America, lying to the northward of lat. 60°. In size it nearly equals the small breed of cattle peculiar to the highland districts of Scotland; the weight, however, attained by it, when in good condition, is about seven hundred pounds; at least bulls of this species, killed during Parry's second voyage, averaged this weight, and yielded about four hundred pounds of solid meat; they stood about three feet and a half high at the withers. The flesh of the bull is high-flavoured, and both bulls and cows, when lean, smell strongly of musk, their flesh at the same time being dark and tough, and certainly far inferior to that of any other ruminating animal existing in North America. The head is large and broad, and the nose very obtuse; there is no naked muzzle, as in our ox, for the upper lip, which is destitute of a furrow, and the chin, are covered with a close coat of short white hairs. The nostrils are oblong slits, inclining towards each other from above downwards; their inner margins, for the breadth of about three lines, are naked. It is on the absence of a true muzzle—that is, of a broad, naked space, extending between and around the nostrils, and occupying the upper lip, as we see on the cow—that the genus *Ovibus* is founded for the reception of this animal. The word is compounded of

ovis (a sheep) and *bos* (an ox), the animal having the general aspect and character of the ox, but agreeing with the sheep and the goat in not having a naked muzzle. This point may seem of little importance, but such is not the case; it is connected with the habits of the animal, and therefore of more consequence than might at first be suspected. With a broad naked muzzle is associated that mode of taking food expressed by the term "grazing;" but *ruminants* having the muzzle hairy, as the sheep, browse; they nip the herbage, making a certain use of their lips in guiding or collecting it: these parts enjoy greater mobility, and a certain degree of prehension. The food of the Musk Ox for the chief portion of the year consists of lichens, which cover the rocks, and on which the animal browses; in summer coarse grasses, the twigs of willow, birch, pine-shoots, and other herbage constitute its fare. The eyes are moderate, with greatly projecting orbits; the ears are short, and scarcely to be seen amidst the long hairs of the head; and the tail, being of small dimensions, is quite concealed by the long woolly fur of the haunches. The Musk Ox is fitted by its clothing for the temperature of the regions appointed as its abode; long, thick, woolly, brown hair covers the whole of its body, and hangs nearly to the ground; from the throat it falls in thick masses like a mane; on the neck, shoulders, and haunches, it is long and matted; and underneath the outer is an inner layer of exquisitely fine wool.

CHAPTER XIII.

THE *MARSUPIALIA*—THE KANGAROO.

THIS animal belongs to the Order *Marsupialia*, or *Marsupiata* (from *Marsupium*, a purse or bag), which term was suggested by one of the most remarkable characters which these animals exhibit, viz. the possession in the female of a pouch or fold of skin on the lower part of the abdomen, in which the young are carried. The first discovered species of this order were found in North America, and are described by the earlier English authors under the name of Opossum; subsequently other animals were found in certain islands of the Indian Archipelago and in Australia. The *Marsupialia* are divided into several families and many species.

The most striking peculiarity in the Marsupial animals consists in the premature birth of their young, and, consequently, the imperfect state of development which they present at this period, compared with other Mammalia. The young of the Great Kangaroo (*Macropus major*), which Professor Owen examined twelve hours after birth, “resembled an earthworm in the colour and semitransparency of its integument, adhered firmly to the point of the nipple, breathed strongly but slowly, and moved its fore legs when dis-

turbed. Its body was bent upon the abdomen, its short tail tucked in between the hind legs, which were one third shorter than the fore legs, but with the three divisions of the toes now distinct; the whole length, from the nose to the end of the tail, when stretched out, did not exceed one inch and two lines." An animal so little advanced as the young Marsupial at the time of its birth, requiring a constant supply of food, and so ill fitted to bear the exposure which the more advanced young of other animals are subject to, must, it would appear, perish unless some peculiar provision for their safety were substituted, and in the marsupium or pouch we find such a provision. "Aided and protected by modifications of structure," observes Professor Owen, "both in the system of the mother and in its own, designed with especial reference to each other's peculiar condition, and affording, therefore, the most irrefragable evidence of creative foresight, the feeble offspring continues to increase from sustenance exclusively derived from the mother for a period of about eight months. The young Kangaroo may then be seen frequently to protrude its head from the mouth of the pouch, and to crop the grass at the same time that the mother is browsing. Having thus acquired additional strength, it quits the pouch, and hops at first with a feeble and vacillating gait, but continues to return to the pouch for occasional shelter and supplies of food till it has attained the weight of ten pounds. After this it will occasionally insert its head for the purpose of sucking, notwithstanding another foetus may have been deposited in the pouch, for the latter attaches

itself to a different nipple from the one that had been previously in use."

The purpose of this wonderful design is admirably explained by the Professor, who says:—"I have always connected with the long droughts in Australia, with the extensive tracts where there are no waters, with the difficulty of obtaining that necessary element of life, this singular peculiarity—viz. a soft, warm, well-lined, portable nursery-pocket or 'perambulator.' Take the case of one of our wild quadrupeds—suppose a fox or wild cat; they make their nest, they have their litter. Suppose it should happen that they must travel one or two hundred miles to get a drink of water, impelled by the peculiar thirsty condition of a nursing mother, but obliged to leave the little family at home, where would that family be when the parent returned from its hundred-mile journey—the poor little blind deserted litter? Why, starved to death. In order that quadrupeds should be fitted to exist in a great continent like Australia, where the meteoric conditions are such as to produce the dilemma I have instanced, these quadrupeds must possess an organisation suited to such peculiar and climatal conditions. And so it is; that form of Mammalian quadruped in this great continent, native to it, and born so as to make these migrations to obtain that necessity of life, has the superadded pouch and genetic peculiarities enabling them to carry their young ones wherever they go."

The greatest peculiarity in the form of the KANGAROO consists in the extreme disproportion of its limbs; the front legs being short and weak, while the

hind ones are very long and muscular. It goes entirely on its hind legs, making use of its forefeet only for digging or bringing its food to its mouth. It is very timid at the sight of men, who sometimes hunt it with dogs; it flees from them by amazing leaps of upwards of twenty feet in length, springing over bushes seven or eight feet high, or going progressively from rock to rock. It carries its tail at right angles with its body when it is moving, and often looks back during its flight. The tail of the Kangaroo, which is very large, and remarkably thick at the base, helps to support it when in a nearly erect posture. In this posture it is raised, as if on a tripod, by the joint action of the hind legs and the tail.

The Great Kangaroo (*Macropus giganteus*, Shaw), the largest species yet known, was the first seen by Europeans. It was first discovered during Captain Cook's first voyage, in 1770, on the coast of New South Wales. The male greatly exceeds the female in size, measuring nearly eight feet from the nose to the tip of the tail, which latter is little more than three feet in length. The largest weigh 140lbs., and some have weighed 220lbs. The general colour is uniform greyish-brown, grizzled on the arms and under parts. A whitish mark runs above the upper lip, and is faintly traceable along the sides of the face. The hands, feet, and tip of the tail are black. It inhabits New South Wales, Southern and Western Australia, and Van Diemen's Land. It is known to the colonists by the names of Boomer and Forester. The flesh of the Kangaroo is considered equal to that of venison.

1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".



Grizzly Bear,

Wolf,

Wolves,

Sloth Bear,

Mountain Sheep, Goat,

CHAPTER XIV.

THE BEAR—THE BROWN BEAR—THE GRISLY BEAR—THE
POLAR BEAR—THE MALAYAN SUN BEAR—THE SLOTH
BEAR—THE SPECTACLED BEAR.

BEAR (*Ursus*) is the name of a group of carnivorous Mammalia termed *Plantigrade*, from their being supported, in walking, on the entire sole of the foot, like human beings. The fore paws of the Bear are pressed flat, and have beneath a large, broad, callous palm; while the hind feet, with a large sole from heel to toe, are also brought in contact with the ground. Accordingly, all plantigrade animals move with a firm, heavy, and almost clumsy step, destitute of lightness and elasticity; they cannot bound along, their limbs being too thick and short, and their feet too flat for such a mode of progression. Not that they are necessarily slow, for the Bear sometimes rushes along with considerable speed; but their pace then partakes of the heavy character so conspicuous in their ordinary mode of walking. The soles of the hind feet, constructed as they are for entire application to the earth, enable them to sit up upon their haunches, and use their fore paws, either for holding food between them or for defending themselves when attacked. Thus the Bear raises himself when assailed, and hugs his adversary with an iron gripe, while he tears him with his teeth.

The plantigrade carnivora are all, or nearly all, climbers; but their mode of climbing does not resemble that of the cat or the squirrel, or any of the light-limbed and sharp-clawed animals; they do not run up a tree and bound from branch to branch, but proceed in the same heavy manner as on the ground; and it is because they can apply to the tree the palm of their paws or the sole of their hind feet—not, however, grasping it—that they are enabled thus to climb. They use their feet, in fact, in the same manner as man, and their mode of climbing resembles his, except that their paws do not grasp. In descending they generally come down hind quarters foremost, carefully availing themselves of any projection. The Bear always does so. Their limbs are robust, the eyes small, but quick and lively, and the head is large, and broad across the top. They rarely devour flesh, except from necessity. The feet have five toes each, armed with strong curved claws. These huge claws, which are terrible weapons, are not retractile, and are well adapted for digging and climbing. These animals are both carnivorous and herbivorous, devouring flesh, vegetable roots, grains, fruits and honey.

The Bear is a solitary animal; he lives nearly the whole of the year apart from his kind, in the most retired parts of the forest, inhabiting caves, huge hollow trees and similar places of concealment. As a general rule Bears pass the winter in a dormant state, without taking food; and at this season the female brings forth her cubs. At the approach of winter he betakes himself to some cavern or squeezes himself into a hollow tree, or builds a hut of branches, and lines it with moss,



where he sleeps his long winter's sleep. In the spring he comes forth lean and hungry, and therefore is more dangerous than at any other time, for he is then ready to devour everything he meets with. The Bear has a very curious way of attacking his enemy; he springs upon him, and squeezes him to death in his arms.

The BROWN BEAR (*Ursus Arctos*, Linnæus) inhabits the mountainous districts of Europe, from very high latitudes—the Arctic Circle—in the north, to the Alps and Pyrenees in the south; Siberia, Kamtschatka, and even Japan, to the eastward; and a portion of the northern regions of America. It is doubtful if any species exist in Africa. This species is most generally known, and was formerly native, in England, and is still very numerous in many parts of Europe. The Brown Bear is of a surly and capricious temper, but when taken young may be tamed, and is often taught—probably by the exercise of cruelty—to move in a clumsy sort of dance to music, and exhibited in the streets. To the Kamschatkans this Bear seems to give the necessities and even the comforts of life. The skin forms their beds and their coverlets, bonnets for their heads, gloves for their hands, and collars for their dogs, while an overall made of it, and drawn over the soles of their shoes, prevents them from slipping on the ice. The flesh and fat are their dainties. Of the intestines they make masks or covers for their faces, to protect them from the glare of the sun in the spring, and use them as a substitute for glass by extending them over their windows. Even the shoulder-blades are said to be put in requisition for cutting grass. The

flesh is said to resemble pork, and the tongue, paws, and hams are considered delicacies by European epicures, and the fat or "grease" is much valued for nourishing and beautifying the hair. The Brown Bear often exceeds seven hundred pounds in weight.

The GRISLY BEAR (*Ursus ferox*) is a native of the Rocky Mountains of North America, and the district eastward of them. It is a truly formidable animal, of enormous strength and great ferocity. Lewis and Clarke give the measurement of one as nine feet from the nose to the tail, and state that they had seen one of larger dimensions. They are said to reach the weight of 800lbs. In most cases this Bear is not disposed to attack human beings if unmolested; it will rear itself on the hind legs, show its teeth, then turn round to depart, and perhaps again repeat the same menace; on other occasions it may be scared by noise, such as that Mr. Drummond used, by beating a large tin box; still, it is by far the most formidable animal of the American Continent, capable of striking down a bull bison, notwithstanding its enormous strength, and of dragging the carcass, weighing from 1000lbs. to 1200lbs., to a pit in some level spot dug for its reception, where it buries it, and repairs daily to feast. The Bears from the eastern side of the Rocky Mountains, more abundantly supplied with animal food, are much more ferocious than those on the west, where they in a great measure subsist on berries. Fortunately for the hunter the adult animal cannot climb trees. Its tenacity of life is wonderful, and it seldom falls before it has received many bullets through the vital organs.

The POLAR BEAR (*Ursus maritimus*), one of the largest and most formidable of the group, is of more lengthened form than any of the other species; the head is very much elongated and flattened; the ears and mouth comparatively small; the neck very long and thick, and the sole of the foot very large. The fur is silvery white, more or less tinged with yellow, close, short, and even on the head, neck, and upper part of the back; long, fine, and inclined to be woolly on the hinder parts, legs, and belly. The soles are almost entirely covered with long hair, affording the animal a firm footing on the ice; the claws are black, thick, and short. The average length of the Polar Bear is about six feet; but Captain Lyon states, that one which was unusually large measured 8 feet 7½ inches, and weighed 1600 pounds. This monarch of the realms of frost prowls over wastes of snow, over bleak rocks, over fields of ice, or even swims out from floe to floe, or from island to island, ravenous for prey. Animals of the land and of the sea, birds and their eggs, the dead and the living, are alike devoured. In summer mountain-berries are eagerly sought for; nor are sea-weeds and marsh-plants rejected.

The MALAYAN or SUN BEAR (*Ursus Malayanus*) inhabits Sumatra, and is remarkable for the extensibility of the lips, the length and flexibility of the tongue, the shortness and smoothness of the fur, and the large size of the claws. It is said to prey in its native forests on the honey of the wild bees, and its long slender tongue is well adapted for extracting the combs from the hollows of trees. Vegetables form its chief food.

THE SLOTH BEAR OR LABIATED BEAR (*Ursus labiatus*) when first described was regarded as a sloth, but is a true bear. This uncouth animal is a native of the hilly and mountainous parts of India, and was observed by Colonel Sykes in the Deccan. It is a robust, rough, clumsy animal, with short massive legs, huge hooked claws, and extremely flexible lips, which project at all times considerably in front of the jaws, and are capable of being protruded in a tubular form far beyond the muzzle, so as to constitute an instrument of suction. The tongue is long, flat, and square at end. The hair is long and shaggy, and on the upper part of the head and neck it is sometimes twelve inches in length, and separates into two portions, one of which overhangs the eyes, imparting a peculiarly heavy appearance to the animal's physiognomy, while the other forms a thick mane across the shoulders. The general colour is black, intermixed with brown; on the breast is a triangular mark of white. It dwells in caves, and its food is said to consist chiefly of fruits, honey, and termite ants, for the demolishing of whose houses its claws are well adapted. Of the ferocity of the Sloth Bear, and of the mode in which it subjects its victims to dilatory torture, Captain Williamson, in his 'Oriental Field Sports,' gives several horrible instances. Instead of destroying life at once, it will suck and chew a limb till it is a perfect pulp, and thus inflict the most agonising torments, till death at length relieves the sufferer.

THE SPECTACLED BEAR (*Ursus ornatus*) has obtained its name from two semicircular marks of dirty yellow or buff colour extending from the muzzle, and arching

over each eye. The under parts of the throat and neck, and the upper part of the breast, are whitish; the



THE SPECTACLED BEAR.

general fur is smooth, shining, and black. The Spectacled Bear inhabits the Cordilleras of the Andes in Chili; but we have no account of its habits.

CHAPTER XV.

THE WOLF—THE COMMON FOX—THE RED FOX—THE
TRI-COLOURED FOX—THE BLACK OR SILVER FOX.

THE WOLF (*Canis lupus*) bears a strong resemblance to the dog tribe, both in his outward form and internal structure ; but he possesses none of the useful or agreeable qualities of the “ friend of man.” It is distributed throughout Europe generally, and a great part of Asia, but in Europe their numbers are much diminished, in consequence of the increase of population, and the extension of agriculture. They were once very formidable in England, and at a still later period in Scotland and Ireland. King Edgar, who began to reign A.D. 959, took great delight in hunting Wolves, and encouraged his subjects to destroy them ; and he changed a heavy tax, which had been imposed on one of the Welsh princes, into a tribute of 300 Wolves’ heads. Persons often held their lands on condition of their bringing to the king a certain number of Wolves’ heads. They are now completely extirpated throughout these islands, but in Russia, Norway, and Poland they are still numerous and destructive ; and in mountain districts of Spain, Portugal, France, and Italy, the shepherds are obliged

to employ powerful dogs to defend their sheep. In countries where Wolves are numerous, whole droves come down from the mountains, or out of the woods, to seek their prey. They attack the sheep-fold, and enter villages, and carry off sheep, lambs, hogs, calves, and even dogs. The horse and the ox, the only tame animals that make any resistance to these destroyers,



THE WOLVES OF FRANCE.

are frequently overpowered by their numbers, and their incessant attacks; and even man himself on these occasions sometimes falls a victim to their rapacity. Sir John Franklin met with some White Wolves in his explorations of the Polar regions.

The COMMON FOX (*Vulpus vulgaris*) is spread over Europe generally, and is everywhere noted for its cunning and address, as well as for its prowling, nocturnal habits. In England it is preserved for the sake of the chase. The female produces, generally in April, from three to five cubs at a birth. The offensive odour of the anal glands is very powerful. The Fox inhabits burrows, and feeds upon rabbits, hares, game of all sorts, and poultry, and also upon fruits, honey, and eggs. His various stratagems for obtaining prey and avoiding his enemies have justly procured for him the character of cunning; so that "as cunning or crafty as a Fox" has grown into a proverb.

The AMERICAN RED FOX (*Vulpus fulvus*), though it agrees in general manners with the Common Fox, possesses neither the wind nor the same powers of endurance. The fur of the Red Fox, from its softness, smoothness, and depth, is valued as an article of commerce, and about 8000 skins are annually imported from the fur countries where the animal is very abundant, especially in the wooded districts. It has a much finer brush than the European Fox, and is altogether larger. Red Foxes are very difficult to catch, on account of their extreme suspiciousness, which often baffles the precautions of the hunter. When pursued they run very swiftly for a short distance, but their wind soon fails, and they are speedily overtaken.

The TRI-COLOURED FOX is found in Paraguay. Its three colours are bluish or silver gray, rufous, and white.



THE TRI-COLOURED FOX.



THE RED FOX.

The BLACK or SILVER FOX, in its most perfect state, is entirely of a pure shining black, with the exception of the tip of the tail, which, as in other varieties, is




THE BLACK OR SILVER FOX.

white. More commonly the fore part of the head, the sides of the face, and the loins, are grizzled by an intermixture of silver-tipped hairs, and there is frequently also a white spot on the breast. Its fur, which is very beautiful, fetches a much larger price than any other fur produced in North America, and a skin has been sold for three pounds. It inhabits precisely the same districts as the Red Fox.

CHAPTER XVI.

THE REINDEER—THE ELK—THE GNU—THE NYL-
GHAU — THE GEMS-BOK — THE IBEX — THE
CHAMOIS—THE GAZELLE.

HE REINDEER or CARIBAU (*Rangifer Taran-*
dus) is spread through the Arctic regions of
Europe, Asia, and America. It has long,
slender, branched horns, and the female has horns also,
but those of the male are much the larger. In colour
it is brown above and white beneath, but it often
becomes of a grayish-white as it grows older. It con-
stitutes the whole wealth of the Laplanders, a rich
man having often more than a thousand, and supplies
to them the place of the horse, the cow, the sheep, and
the goat. Alive or dead, the Rein-deer is equally sub-
servient to their wants. When it ceases to live, spoons
are made of its bones, glue of its horns, bow-strings
and thread of its tendons, clothing of its skin, and its
flesh supplies a savoury food. During its life its milk
is made into cheese, and the animal is employed to
convey its owner over the snowy wastes of his native
country. A couple of these swift creatures yoked
together will carry their master 112 English miles in a
day. In the language of Lapland, "They will change

Ny!ε'ha!.

Ibex.

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• 2021-11-11





Gazelle.

Elk. Cervus.

Ibex.

Nyghau.

his horizon three times in the twenty-four hours ;” that is, they are able to traverse three times the length they can see at starting. The pace which the Reindeer can keep up for a whole day is rather a trot than a bounding. Its hoofs are cloven and moveable, so that it spreads them abroad as it goes, to prevent its sinking in the snow, and as the animal moves along they are heard to crack with a rather loud noise. The sledge is formed like a boat ; the traveller is tied into it, and is conveyed rapidly along by night as well as by day, being directed in his course by observing the course of the stars and the quarter from which the wind blows. They swim swiftly.

The ELK, ELLAN, or MOOSE-DEER (*Alces Americanus*), which noble species stands higher at the shoulder than the horse, is a native of northern Europe and the northern regions of America, where it is best known. It also extends through Asiatic Tartary to the north of China. In its winter dress the Elk is of a brownish-black, almost inclining to the latter colour, with the exception of the limbs, which are grayish-yellow or fawn colour. The mane is of a fawn colour ; the sides of the head of a clear dull grayish-brown. Its summer dress is always brown.

THE GNU (*Antilope Gnu*) has a remarkable form, the head and horns being those of the Cape buffalo ; the neck, tail, and mane those of the horse ; and the body and limbs those of the stag. They live in herds, and inhabit the plains of Southern Africa to an unknown distance into the interior. The Gnu is as large as a pony, and a herd seen in the distance might easily

be mistaken for a troop of quaggas. They are wild, suspicious, and fierce.



HUNTING THE GNV.

The NYL-GHAU (*Antilope picta*) is another remarkable species of Antelope. It is upwards of four feet high at the shoulder, and extremely powerful. It inhabits the forests of India. The colour of the male is slaty blue, and that of the female tawny red.

The GEMS-BOK (*Antilope oryx*) is a heavy stout animal, about five feet in length and three feet high at the shoulder. The horns are from two feet to two feet and a half in length, and almost perfectly straight.

The general colour is iron-gray, and this is separated from the white body by a black band. The white face is crossed with two bands of black.



THE GEMS BOK.

184 *Anecdotal and Descriptive Natural History.*

The **IBEX** (*Capra ibex*), a bold, active, and powerful animal of the goat group, about two feet and a half in height, armed with huge sweeping horns, inhabits the Alpine heights of Europe and western Asia. It associates in small herds, consisting of a male and a few females. The horns of the male curve boldly over the back, their anterior surface presenting a series of regular protuberance or partial rings, and their length is often three feet. In the female they are smaller.

The **CHAMOIS** (*Antilope rupicapra*) inhabits the Alps, the Pyrenees, the Carpathian and Grecian mountains, and the mountain chains of Caucasus and Taurus. It is about the size of a large goat. Its general colour is of a dark chestnut brown, but the forehead, sides of the lower jaw, and the muzzle are white. Its acuteness of hearing, sight, and smell, its security on the slightest ridge of the towering crag, or precipice, its wonderful activity and address, have been long celebrated; its chase demands the utmost nerve, daring, and powers of endurance.

Of the **GAZELLE** there are several species, which live on the wide plains of Syria, Arabia, Western Asia, and northern and southern Africa. They are remarkable for their light, airy, and elegant appearance, and the beauty of their large, mild, lustrous black eyes, which have been praised by Byron and other poets in many a beautiful passage.

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